Choices for childbirth: The role of psychological and social factors in the nature and extent of women's decisions for labour and delivery and their influence on post-natal outcomes.

Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor in Philosophy by

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Research into birth plans has considered women's experiences of their usefulness as an aid to communicating preferences for childbirth. It has also evaluated implications for post-natal well-being based on the realisation of expressed preferences in labour and delivery. The current study aimed to identify the psychosocial profile of birth planners and to explore the outcomes for these women as compared with non-planners post-natally. It also compared the psychological constructs measured in the sample with a non-pregnant population to see differences between pregnant, post-natal and non-pregnant women on these dimensions. A sample of 140 women who had not been pregnant in the past year completed a questionnaire measuring: Age, occupational group; ethnic group; general health status, health knowledge, attitudes towards doctors and medicines; locus of control; coping style; perceived social support; and beliefs about pain control. A questionnaire was also given to 120 women in four antenatal clinics across a primary care trust in the North West of England. This questionnaire produced data on all of the variables in the comparison questionnaire, plus: Parity; antenatal education; birth plan use; medical conditions; information seeking; and childbirth self-efficacy. Women also described in text their preferences for birth. At least four weeks after delivery these women completed a further questionnaire consisting of the seven measures used in both the previous two questionnaires, plus: experience of birth; usefulness of birth plan; and post-natal depression. They also described in text their experience of birth. Results showed that birth planners were younger and had lower levels of internal health control than non-birth planners. Birth planners tended to use problem focussed coping styles, perceived less support from their significant other and perceived doctors as more powerful in pain control than non-birth planners. More positive psychological post-natal outcomes were experienced by women who valued their birth plans if they had one but overall birth planners experienced more negative psychological post-natal outcomes than non-birth planners. The non-pregnant sample was comparable in demographic terms to the pregnant sample but differed in most subscales across all measures to the pregnant sample pre-natally and to a lesser extent post-natally. The factors implicated in birth planning and psychological post-natal outcomes are discussed both in terms of the literature and possible implications for the training and practice of midwives.

Introduction

The original idea for this thesis arose from a growing interest in the area of perinatal psychology. Having previously completed an MPhil in memory and emotion in pregnancy I wanted to continue research in this field by exploring the psychological factors around pregnancy and childbirth. I became fascinated with the concept of birth plans and the tension that seemed to exist between women's right to choose their medical care and the ethical and moral dilemmas that arise from the implications of those choices for the safety of the baby. This set of circumstances is unique in medical decision making scenarios and its salience for both mother and baby I felt was worthy of exploration. I discussed my ideas with colleagues in psychology, staff from the department of midwifery, and friends with children. I began to acquaint myself with the world of midwifery, with which I was relatively unfamiliar. I attended a module on normal childbirth, reading the assigned textbooks and journal articles and chatting with the midwifery undergraduates during coffee breaks as they shared stories about their placements. This helped me to develop a more rounded picture, beyond my own perspective as a psychologist and mother.

This early information gathering gave me a sense of some of the key issues that ought to be investigated in my research. There was at this point a range of possible methodological options. Having used experiments, interviews and diary studies in my earlier research I was drawn to the possibilities that the measurement of constructs could offer here. Further investigation confirmed that a range of very relevant and robust measures were available that had the potential to access the issues I wanted to address. It became apparent not only that some measurement would be required but also the pivotal experience of childbirth would necessitate some re-testing to identify any changes in these measurements. The context of these measurements would also need to be considered against the backdrop of some form of reference data. Hence a survey design of two conditions, one with two time points, emerged.

The potential variables and measures were then assigned to time points and conditions based upon evidence from relevant background literature and their usefulness in addressing the associated research question. The following tables (0.1, 0.2 and 0.3) show the variables that were tested and the measures used to test them at both time points (pre-natal / T1 and post-natal / T2) and in the non-pregnant sample against which T1 and T2 data was compared.

Plan of research

Table 0.1

Variables measured in pre-natal testing (T1)

Age
Parity
Occupation
Ethnic group
Ante-natal class attendance
Birth plan use
Medical conditions
General health
Health knowledge
Information seeking (3 items)
Attitudes towards Doctors and Medicines Scale
Positive Attitudes towards Doctors
Positive Attitudes towards Medicines
Multidimensional Health Locus of Control Scale
Internal Health Locus of Control
Powerful Others Health Locus of Control
Cybernetic Coping Scale
Change the Situation
Accommodation
Devaluation
Avoidance
Symptom Reduction
Multidimensional Scale of Perceived Social Support
Significant Other
Family
Friends
Beliefs about Pain Control Questionnaire
Internal pain control
Powerful Doctors pain control
Birth expectancies
Birth plans
Clinic
Childbirth Self-efficacy Inventory
Self-efficacy total
Outcome expectations total

Table 0.2

Variables measured in post-natal testing (T2)

Birth experience
Birth plan effectiveness (2 items)
Birth story
Edinburgh Post-natal Depression Scale
General Health
Health knowledge
Information seeking (3 items)
Attitudes towards Doctors and Medicines
Positive Attitudes towards Doctors
Positive Attitudes towards Medicines
Multidimensional Health Locus of Control Scale
Internal Health Locus of Control
Powerful Others Health Locus of Control
Cybernetic Coping Scale
Change the Situation
Accommodation
Devaluation
Avoidance
Symptom Reduction
Multidimensional Scale of Perceived Social Support
Significant Other
Family
Friends
Beliefs about Pain Control Questionnaire
Internal pain control
Powerful Doctors pain control

Table 0.3

Variables measures in the comparison sample

Age
Occupation
Ethnic group
General health
Health knowledge
Attitudes towards Doctors and Medicines Scale
Positive Attitudes towards Doctors
Positive Attitudes towards Medicine
Multidimensional Health Locus of Control Scale
Internal Health Locus of Control
Powerful Others Health Locus of Control
Cybernetic Coping Scale
Change the Situation
Accommodation
Devaluation
Avoidance
Symptom Reduction
Multidimensional Scale of Perceived Social Support
Significant other
Family
Friends
Beliefs about Pain Control Questionnaire
Internal pain control
Powerful Doctors pain control

Thesis overview

This thesis is based upon one single large study. The study comprised two groups of participants, one of which was tested at two time points. The research addressed three key questions. The thesis is organised around these three questions, whilst broadly taking the form of a conventional research paper. Table 0.4 outlines the chapters and maps the story of the research through the thesis.

Table 0.4
Thesis overview

Introduction	Chapter 1	Gives the contextual background, literature review and development of research questions.
Method	Chapter 2	Explains research design, participants, measures, procedure and analysis as appropriate to each group and time point.
Results	Chapter 3	Presents the descriptive statistics from the pregnant sample at time point 1.
	Chapter 4	Presents the inferential statistics from the pregnant sample at time point 1, addressing research question 1.
	Chapter 5	Presents the descriptive statistics from the pregnant sample at time point 2.
	Chapter 6	Presents the inferential statistics from the pregnant sample at time point 2, addressing research question 2.
	Chapter 7	Presents the descriptive statistics from the comparison sample.
	Chapter 8	Presents the inferential statistics from the comparison sample, addressing research question 3.
Discussion	Chapter 9	Discusses the findings of research question 1 from chapters 3 and 4.
	Chapter 10	Discusses the findings of research question 2 from chapters 5 and 6.
	Chapter 11	Discusses the findings of research question 3 from chapters 7 and 8.
	Chapter 12	Provides a general discussion and a conclusion.

Table 0.5
Abbreviations used throughout the thesis

ADMS	Attitudes towards Doctors and Medicines Scale
AIMS	Association for Improvements in the Maternity Services
BPCQ	Beliefs about Pain Control Questionnaire
CBSEI	Childbirth Self-Efficacy Inventory
CCS	Cybernetic Coping Scale
DoH	Department of Health
Efficacy-AL	Efficacy – Active Labour
Efficacy-SS	Efficacy – Second Stage
EPDS	Edinburgh Post-natal Depression Scale
I	Internal (pain control)
IHLC	Internal Health Locus of Control
MCWP	Maternity Care Working Party
MHLC	Multidimensional Health Locus of Control
MSPSS	Multidimensional Scale of Perceived Social Support
NCT	National Childbirth Trust
NHS	National Health Service
NICE	National Institute for Clinical Excellence
NMC	Nursing and Midwifery Council
NPEU	National Perinatal Epidemiology Unit
Outcome-AL	Outcome – Active Labour
Outcome-SS	Outcome – Second Stage
PAD	Positive Attitudes towards Doctors
PAM	Positive Attitudes towards Medicines
PHLC	Powerful others Health Locus of Control
PND	Post-Natal Depression
PD	Powerful Doctors (pain control)
PTSD	Post-Traumatic Stress Disorder
RCM	Royal College of Midwives
RCOG	Royal College of Obstetrics and Gynaecology
T1	Time point 1
T2	Time point 2
TENS	Transcutaneous Electrical Nerve Stimulation
VBAC	Vaginal Birth After Caesarean
WHO	World Health Organisation

Chapter 1 – An introduction to decision making for childbirth

In this chapter, the background section firstly considers the context of decision making in childbirth in terms of relevant policy documents published by the government and professional bodies. The literature review that follows considers relevant material from the field of decision making, including medical decision making and decision making for childbirth. Issues surrounding decision making for childbirth are also considered in the form of autonomy and birth plans. Finally, post-natal psychological well-being is discussed and the rationale for the current study is developed, leading to the three research questions on which it is based.

1.1 Background

This section sets out the current context of childbirth by considering recent policy documents published by the Department of Health and various professional bodies. Since proposals for this research were first accepted in 2006, the volume of policies, guidelines and surveys on the issues of choice, decision making, information, communication and their impact on outcomes in maternity care has increased markedly. The National Perinatal Epidemiology Unit (NPEU) (2006) reported that women felt restricted in terms of their options for antenatal care, carers and the location of this care and that of their birth. Women also reported feeling limited in movement and position during birth and only one fifth of women experienced continuity of care in childbirth.

The following year the government published 'Maternity Matters: choice, access and continuity of care in a safe service' (DoH, 2007). Here they pledged that four 'national choice guarantees' would be in place for expectant parents by the end of 2009. These choices related to access and type of care, both ante- and post-natally, as well as location of birth. Later the same year, the Maternity Care Working Party (MCWP) (comprised of representatives from the Royal College of Midwives, the Royal College of Obstetricians and Gynaecologists, and the National Childbirth Trust) published a consensus statement – 'Making normal birth a reality' (NCT/RCM/RCOG, 2007). This was in response to concerns from all contributing parties that levels of medical intervention were too high and that this was having an effect on outcomes for women, both physically and psychologically. The MCWP also recommended continuity of care in labour with a known midwife, as well as good

access to information and resources enabling a real sense of informed choice for the woman.

Six months later, the Nursing and Midwifery Council (NMC) updated their Code of standards of conduct, performance and ethics for nurses and midwives. This contains a section on advocacy and autonomy which emphasizes that: ‘people have the right to make their own decisions regarding their healthcare’ (Nursing and Midwifery Council, 2008) and goes on to set out ways in which nurses and midwives can advocate choice and promote autonomy through sharing of information and supporting and respecting decisions.

The National Institute for Clinical Excellence (NICE) published its most recent full guidelines on antenatal care in 2008 (guideline 62) which highlighted the importance of woman centred care and informed decision making. The guidelines explicitly state that women’s plans for birth should be discussed with her at or before 36 weeks gestation. More controversially, it states that: ‘women’s decisions should be respected, even when this is contrary to the views of the healthcare professional’ (p.12). The guidelines go on to recommend further research into alternative ways to enable healthcare professionals to provide appropriate support to women when making childbirth decisions (National Institute for Clinical Excellence, 2008).

Also in 2008, the Healthcare Commission (now the Care Quality Commission) published ‘Toward better births: a review of maternity services in England’ (Healthcare Commission, 2008). This review was published after concerns over the quality of maternity care in England. It was based upon information provided by trusts and surveys of staff members and maternity service users. They reported that: there was still not adequate continuity of care for women in childbirth; post-natal communication was poor; some women were still unable to access antenatal information, including classes and options for birth location (where options existed); women were still experiencing too many medical interventions; too few midwife-led units were operational; unequal access to perinatal mental health services (dependent on location); and that doctors and midwives were still experiencing conflict and lacked shared goals.

The Pregnancy Book was first published in 1999 by the Health Education Authority (which later became the Health Development Agency and is now part of NICE). This

book was given to every woman having her first baby in England at her first midwife appointment. Since then several more editions have been published, the most recent being 2009, in order to communicate some of the changes in policy, health care and advice over the past decade, some of which resulted from these documents.

Most recently, the Department of Health published 'Maternity and early years. Making a good start to family life' (Department of Health, 2010). Again, the recommendation was made that women, in consultation with maternity care staff and partners, where appropriate, create a personalized plan containing preferences for care, including the desired location for birth. According to the Maternity Services Survey (Care Quality Commission, 2010) the majority of women (83%) were already given the choice of where to give birth and three quarters stated that they were 'always' involved in decisions about their care. However, and of particular relevance to the current study, more than one in five felt that they had not been given enough information about possible emotional changes post-natally.

It seems that during these years of policy decision making, the policy-makers are all advocating the same approach. In practice, however, women's experiences seem to vary considerably based at least on geography, education, ethnicity and parity (Redshaw & Heikkila, 2010). This study aims to investigate the impact, if any, this woman-centred maternity care approach has had on the choices women make for childbirth, their realization, and the implications for psychological outcomes.

1.2 Literature Review

Having considered the current context of childbirth in the UK, this section focuses on literature that underpins decision making for childbirth. It begins with a general review of decision making theory and research, then focuses on decision making in medical and maternity contexts. Issues relevant to maternity decision making such as autonomy and birth plans are discussed. Finally the psychological outcomes of birth are examined.

The literature search was conducted on a range of databases that are relevant to either or both psychology and midwifery and available via the University of Chester library services portal. These databases were: BioMed Central; Ingenta Connect; Proquest Nursing Journals; PsycARTICLES; Psychology and Behavioural Sciences

Collection; Science Direct; Wiley Online Library; CINAHL Plus *with* Full Text; PsycINFO; PubMed; SocINDEX *with* Full Text; Web of Knowledge; Zetoc and Zetoc Alert; Cochrane Library; and MEDLINE. The first search term adopted in identifying relevant literature from these databases was 'birth plan'. Then a series of searches were undertaken using the term 'childbirth' with the Boolean operator AND, followed by: experience; control; social support; pain control; self-efficacy; satisfaction; coping; information; and decisions. Research papers returned in these searches that were published in peer-reviewed journals were organised into central and peripheral classifications according to relevance. Letters, commentaries and articles were not included among the saved relevant literature unless they were considered pivotal to a key issue and originated from an academic source.

1.2.1 Decision Making models in the childbirth context. Early models of decision making were based upon principles from economics and mathematics, such as subjective expected utility (SEU) theory (Savage, 1954). SEU theory suggests that values are attributed to various options available in a potential choice or decision, thereby weighting them according to preferable attributes and likelihood of the realization of that option. This approach was criticised for being unnecessarily involved by Simon (1957), who alternatively introduced the principle of 'satisficing', derived from a decision option being both satisfactory and sufficing. This concept may be somewhat superficial in the childbirth context as women may desire more than an 'adequate' experience. In making decisions for childbirth women are planning for the best outcome they can achieve, the safe delivery of a healthy baby in as positive a birth experience as possible. What that positive birth experience represents for them may differ. For some women this may be pain free and medically managed. For others it may be natural, drug-free and intervention-free.

Prospect theory (Kahneman & Tversky, 1979; 1984) attracted much attention as the first major psychology-centred model of decision making and is potentially more useful in the childbirth context. According to prospect theory, the decision making process begins with the identification of the starting point from which the decision is to be made (the editing phase). Choices from this point will be evaluated and made in a bid primarily to avoid losses rather than make gains (loss aversion). Prospect theory can be applied to the decision making process of birth planning. Women will identify and evaluate their options, for example for pain relief, in terms of the possible

implications for their birth experience. Choosing opiate-based medication may diminish her birth experience by reducing the acuteness of sensation. An epidural may slow her labour and trigger a domino effect of a series of required interventions (e.g. augmentation, episiotomy, instrumental delivery). Entonox may not provide sufficient pain relief and result in feeling out of control and potentially traumatized. Each of these options must be evaluated in terms of their potential costs and benefits to the birth experience.

Arkes and Ayton (1999) identified that, in addition to loss aversion, individuals tend to pursue their choices more once they have made some sort of investment in it, no matter how negative the outcomes (the sunk-cost effect). We are accountable to the rest of society for the choices we make and mistakes are costly in terms of social embarrassment. This can be observed in the childbirth context in women's determination to follow their birth plans, sometimes in the face of medical evidence to the contrary. For some women, the birth plan represents their childbirth philosophy and they may have been quite evangelistic about this during their pregnancy. For them to not then follow this and change their mind would be too costly to them in terms of social embarrassment. They would rather dogmatically stick to their choices even if it means unnecessary discomfort than suffer such humiliation.

This is further evidenced in Tversky and Kahneman's (1992) later refinement of prospect theory (cumulative prospect theory). The weightings attributed to alternatives can be accumulated instead of separated, with different weightings attributed according to whether they represent a gain or a loss in that decision choice. It is these gains and losses that carry the value, rather than the ultimate outcome. In childbirth, the woman who follows her birth plan may place disproportionate value on her choices in a bid to protect herself. It is not that she does not want to deliver a healthy baby safely. She may also need to maximize her chances of surviving the experience psychologically intact.

Emotional factors have the potential to play a large part in decision making. They can cause a heightened sensitivity to the prospect of loss and its negative emotional consequences. Kermer, Driver-Linn, Wilson and Gilbert (2006) termed this impact bias. Their studies show how individuals anticipate negative emotional consequences to losses to be greater than positive outcomes of equivalent gains.

Kermer *et al.* (2006) suggest that this is a result of an underestimation of individuals' assessment of their own ability to cope with loss. Certain brain areas responsible for emotion have also been linked to the framing effect in prospect theory. The brain areas identified by DeMartino, Kumaran, Seymour and Dolan (2006) play a role in how anxiety is experienced and therefore a state of heightened anxiety may be attributable to a more marked aversion to loss when making a choice. This may help explain the choices made by women in their birth plans. Women with more anxiety, either generally or regarding impending childbirth, may make decisions about birth focussed on loss-avoidance.

The sunk-cost effect of prospect theory has also been associated with emotional factors. Wong, Yik and Kwong (2006) described how negative emotional consequences of a decision may cause a retreat away from the original option in order to alleviate emotional discomfort. Wong *et al*. suggested this withdrawal was more likely to occur in individuals who score high on scales of neuroticism and in decisions of personal responsibility. Such withdrawal away from making decisions following negative emotional consequences are illustrated in the childbirth context by women who have a negative experience of birth with their first child. If they had planned the birth and this plan was not realised, they then abandon the possibility of planning for birth with their second child. Emotions can also cause decisions to be avoided altogether, particularly when they represent potential risk to the individual. Ritov and Baron (1990) termed this preference for taking no action at all to taking a possible risk as omission bias. In the childbirth context, omission bias could be applied to women who do not have a birth plan. The common notion of women who do not have birth plans as having a relaxed attitude to birth and being prepared to 'take it as it comes' would appear a misperception in this sense. Ritov and Baron (1990) seem to suggest that this behaviour could be construed as an emotional reaction to risk avoidance.

Clearly then, emotional factors seem to impact upon decision making, particularly negative emotions. Anderson (2003) suggested in his rational-emotional model that specifically it was regret and fear that played the most vital roles in the emotional impact of decision avoidance. Fear is often experienced by women anticipating childbirth to some extent (Raynor & Oates, 2003) and therefore may play a role in influencing the choices made in preparation for it. However, regret is clearly an

emotion that would not be welcome following the birth of a baby so it is reasonable to assume a woman would be motivated to avoid this. Consequently this would also be an instrumental consideration in the decisions she made for birth, though probably not consciously. The largely unconscious aspect of decision making was discussed by Dijksterhuis and Nordgren (2006). They argue that the unconscious is actually better suited to more complex decision making tasks due to the fact that it will naturally ascribe weightings to the various attributes of each choice in accordance with personal importance. In addition to the emotional and unconscious nature of decision making, the process has been described as social (Tetlock, 2002) and complex (Wright, 1984). Both of these attributes are also relevant to the childbirth context.

Finally, self-esteem has also been found to impact upon the decision making process. Josephs, Larrick, Steele and Nisbett (1992) found that individuals with high levels of self-esteem were more likely to choose riskier options than those with lower self-esteem levels. Self-esteem is not addressed explicitly in the current study. However, related constructs of locus of control and self-efficacy are (Judge, Erez, Bono & Thoresen, 2002).

It is easy to see how each of these factors may play an influential role in decisions for childbirth. Sometimes plans may have to change and new decisions are required quickly, possibly involving choices carrying different degrees of risk. The extent to which a woman has been made to feel involved in her own care by the midwife and obstetrician, her personal preferences for childbirth and the compatibility of these with what is available and medical opinion, all compound the decision. A woman's level of self-esteem may affect her ability to assert herself and make her wishes known, thereby affecting her self-efficacy for childbirth.

1.2.2 Medical decision making. Research into decision-making in a medical context is a well-established and productive area. It began with considerations of the decision-making processes of medical practitioners, in line with the paternalistic models of the doctor-patient relationship that were dominant at that time. However, as a move towards other models, such as the informed and shared models, became more popular, the research focus began to switch to the decision-making process of the patient, or the doctor-patient partnership.

Much research into patient decision-making focuses on areas such as oncology and cardio-thoracic medicine, where decisions potentially have very profound effects on the patient's health and life. Other research considers the ethical implications of the patient's right to decide in the context of advance directives and DNR (Do Not Resuscitate) orders in patient notes. Other research in this area, however, is more general and is aimed at establishing theories and models of decision-making in the health care context.

Shared decision-making models have gained favour in recent times and Charles, Gafni and Whelan (1997) defined the parameters of such interaction. They described a relationship between the patient and health care professional as one of mutual involvement, shared information, and agreement over treatment. This stands in contrast to other models such as the paternalistic model, the informed model and the professional-as-agent model. In the paternalistic model, the health care professional is considered to have the medical knowledge and therefore is the decision maker, having the patient's best interests in mind and explaining the chosen course of action to the patient. Clearly this model allocates a very passive role to the patient. The informed model seeks to redress the imbalance caused by the medical knowledge of the health care professional by a sharing of the relevant information with the patient in a bid to help them come to an informed choice, where they are in possession of all relevant facts, risks, etc. The professional-as-agent model sees the knowledge remain with the health care professional, who tries to establish with the patient what their preferences are, factoring these in to the decision making process along with their own medical knowledge. This sometimes occurs with the use of treatment decision aids (Charles et al., 1997).

Clearly the paternalistic model of decision making is currently out of vogue and does not sit well with the biopsychosocial framework of modern medical practice. Its opposite extreme, the shared decision making model, is considered unnecessarily liberal by some. The informed and the professional-as-agent models sit somewhere between the two and are the antithesis of each other. Gafni, Charles and Whelan (1998) compare the usefulness of each and conclude that, whilst both models seem to achieve similar results, it is easier to transfer information to the patient than it is to transfer preferences to the professional, thus supporting the informed model.

Charles, Gafni and Whelan (1999) revised their framework of medical decision making models by acknowledging different stages to the decision making process, as well as approaches that are fluid throughout the process or do not fit neatly into any one model. Charles, Whelan and Gafni (1999) advocate increased use of shared decisions in more serious scenarios, when options are available and the stakes are high.

The benefits of mutual decision making are evaluated by Brody (1980). He addresses the gaps in medical knowledge, both generally and individually, resulting in differences between medical professionals in their treatment decisions. Whilst there are often benefits of involvement in decision making to patient morale, Brody (1980) acknowledges that there are some situations in which patients may prefer the medical professional to take the lead in decision making, such as in high-risk situations or when the patient does not possess the capacity to make decisions at that level.

Brody (1980) also discussed the differences in social status between medical professionals and their patients and noted the increase in information with which patients from higher social classes were often furnished. This was examined in greater depth and breadth in a study by Kaplan, Gandek, Greenfield, Rogers and Ware (1995). Their baseline questionnaire for the Medical Outcomes Study showed less participation in decision making for elderly, young adult, less educated, ethnic minority and male patients.

Broadstock and Michie (2000) discuss decision making in terms of underlying cognitive processes, rather than the structure of the decision. They do this within the paradigm of naturalistic decision making, which suggests a two-stage approach to decision making: selection and evaluation. The selection stage involves identifying the options available and pursuing one. In evaluation, that choice is justified to oneself and the knowledge that this will occur can in itself influence the selection stage. This is reminiscent of prospect theory, though it is not explicitly referred to in the paper.

Braddock, Edwards, Hasenberg, Laidley and Levinson (1999) studied the extent to which patients were informed in decision making by conducting a content analysis of audio taped outpatient consultations. They found that only nine percent of decisions

were completely informed, with the majority of these being very basic decisions. In an earlier analysis of the same data, Braddock, Fihn, Levinson, Jonsen and Pearlman (1997) identified the types of information given to patients in decision making. They found that the nature of the decision was most frequently discussed, followed by the risks and benefits relating to the decision options. The patient's understanding of these decision making discussions was rarely checked by the medical professionals at any point. Focus groups of experienced General Practitioners concluded that patients should be involved in decision making relating to their case but only insofar as they feel willing and comfortable to be (Elwyn, Edwards, Kinnersley & Grol, 2000).

In a systematic review of instruments, Elwyn, Edwards, Mowle, Wensing, Wilkinson, *et al.* (2001) identified eight measures that contained an element of patient involvement in medical decision making to varying extents. However, no measure existed where the specific purpose was to address patient involvement in medical decision making. Moreover, those measures that contained items or subscales of relevance were lacking in evidence of validity. Elwyn, Edwards, Wensing, Hood, Atwell, *et al.* (2003) set out to address this gap in the development and validation of the OPTION (observing patient involvement) scale.

What was previously in existence, however, was an intervention developed by Greenfield, Kaplan and Ware (1985) to promote patient's involvement in decision making relating to their medical care. This intervention involved a 20 minute pre-consultation meeting with a clinic assistant, who discussed the patient's medical record with them, as well as treatment techniques used at that facility. The assistant also spent time helping patients to overcome barriers that prevented them asking questions in the consulting room. This intervention successfully resulted in patients who preferred and adopted a more active role in medical decision making relating to their care.

In a review of research into patient participation in decision making, Guadagnoli and Ward (1998) found that the consensus was that patients do wish to be informed of all treatment options available to them and to share in the decision over which treatment option to pursue. One way of involving patients in decision making is through the use of patient decision aids. A review by O'Connor, Llewellyn-Thomas

and Barry-Flood (2004) found that, whilst there exists sufficient evidence to suggest that patient decision aids can be a useful tool, there are several barriers to their widespread implementation. These include awareness, accessibility, acceptability and motivation. The Cochrane Collaboration Inventory currently contains 283 patient decision aids, of which 11 (<.04%) relate to childbirth.

Medical decision making has been modelled on two decision characteristics – importance and certainty – by Whitney (2003). This shared model describes certainty as being present when a clearly preferable option exists in a decision. When minor (less important) decisions are high in certainty, Whitney suggests that it is preferable for the physician to make the decision as the choice is straightforward and the impact on the patient is not significant. However, when more serious decisions (high importance) have to be made and there is less certainty around them, Whitney argues that it is then that the patient should be enabled to take the lead in making the choice, with any support and information as required from the physician. Conflicts arise, Whitney argues, when serious (important) decisions are required which are high in certainty, i.e. there is one superior option, yet the patient and the physician prefer different options to one another. This has clear implications for childbirth if women are committed to particular choices and do not feel that they can entertain an alternative. The doctor is faced with the difficult situation of knowing that the outcome will be poor if the woman continues with her choices but that she has the right to make informed decisions regarding her care. Women in childbirth are faced with a range of choices; many are relatively unimportant and will not impact on the overall outcome. Others are more important and may arise from the unpredictable nature of the childbirth process. These important decisions will carry varying degrees of risk and certainties with regards to outcomes and may occur in emergency situations, perhaps reducing the potential for patient involvement.

Donovan (1995) argues that the patient's role in decision making has not been addressed in research into non-compliance with medical advice. She suggests that, particularly in cases of chronic illness, the notion of compliance is no longer a useful way of viewing the situation and that the more pro-active and informed patients of the modern age must be acknowledged as making choices that feel right for them, rather than merely being non-compliant. Charles, Gafni and Whelan (2000) assert that understanding the context of medical decisions is important to improvements in

doctor-patient communication. Charles *et al.* describe the conversations that take place between doctors and their patients as being spoken with different voices, each laden with their own silent agendas that create obstacles in the decision making process. This echoes the deadlocks women have described in trying to negotiate their care with obstetric consultants (Kitzinger, 2007). Each side, whilst claiming a common goal – the safe delivery of a healthy baby – may be operating according to different agendas.

The recent trend for including and engaging patients in medical decisions relating to their care still, it could be argued, has paternalistic overtones in that it assumes that it is best for the patient to be involved. Some research, however, suggests otherwise and there is evidence that some patients prefer health care professionals to make decisions in their best interests. In a study of 106 patients, Beisecker and Beisecker (1990) found that patients demonstrated information seeking behaviours, particularly in longer consultations, but often still preferred the doctor to make the decision. They argue that this distinction is important and a need to understand does not necessarily reflect a need to assume control and responsibility for medical decisions. This distinction between a need for information and involvement in decision making was highlighted by Strull, Lo and Charles (1984) who conducted a questionnaire study of outpatients and clinicians at hypertension clinics. They found that the clinicians had a tendency to underestimate patients' needs for more information whilst overestimating their need to be involved in decision making related to their treatment.

In a study comparing cancer patients to the general public, Degner and Sloan (1992) found that the public thought that they would want to make treatment decisions if they had cancer, yet cancer patients actually expressed a preference for their clinician to make the decisions regarding their treatment. Whilst this study found little effect of sociodemographic variables, a longitudinal study of patients with various chronic diseases (Arora & McHorney, 2000) did. Again, the majority of patients showed a preference for the clinician to make treatment decisions, especially in older people, less educated people and males. Similarly, McKinstry (2000) found that older people and those of lower social classes showed a preference for treatment decisions to be made by medical professionals; however he did not find a gender effect. Levinson, Kao, Kuby and Thisted (2005) also found a huge majority (96%) of patients liked to be given information on the options available yet half of these still

preferred the clinician to make the treatment decision. Again, those that preferred a more active role in the decision making process tended to be female, more educated, younger and healthier. Ethnic minority groups preferred the clinician to make the decisions. Furthermore, a qualitative study into nursing care by Waterworth and Luker (1990) suggested that patients may go along with a shared decision making approach in order to be compliant and be a 'good' patient, rather than any real desire to take an active role in their treatment decisions.

1.2.3 Decision Making for Childbirth. Having considered decision making in the medical context generally and how this may relate to childbirth, this section examines childbirth decisions more specifically. A search of the Department of Health's (2007) paper 'Maternity Matters' revealed that it uses terms such as choice (choose(s), chosen), option(s) and decision no fewer than 158 times. This suggests that issues of patient autonomy in maternity care are topical and important from policy makers to health care professionals to patients themselves. Decision making in maternity care has attracted increasing attention from researchers and authors since the mid 1980's when the concept of patient autonomy was exemplified in the concept of the birth plan and championed by popular authors such as Sheila Kitzinger (1987; 1992; 1999).

One issue of contention since the medicalisation of childbirth has been the location of birth – home or hospital. Over the last century, childbirth has gone from being an event that routinely took place at home, to primiparous women delivering in hospital and subsequent deliveries in the home, to hospital births being the norm, with a minority of births taking place at home – usually to multiparous women. Again, Kitzinger (2000) took up the argument for women to be allowed to deliver their babies at home when their pregnancies had followed a normal course. The decision making process involved in locating childbirth was studied by Schiff and La Ferla (1985). They found that women who were planning a hospital birth expressed concerns about the physical safety of themselves and their baby, whereas women planning a home birth cited more psychological risks such as perceived loss of control in the hospital environment. These findings suggest that these two groups of women placed emphasis on different factors in childbirth.

The tensions between the medical model of childbirth and the so called ‘midwifery model’ were explored in a paper by Livingston (1987), which identified how childbirth came to be perceived as a dangerous rather than a normal activity. Livingston argues that the social context has profoundly influenced the representation of childbirth and subsequently how it is practiced across Western Europe and the United States. An Australian study explored the impact of antenatal classes on primiparous women’s decisions for childbirth and found that despite having enjoyed the classes, the information they had received at them had little impact upon decisions such as how long they should stay in hospital or how they planned to feed their baby. However, the pain relief information from these classes did inform pain management strategies for labour and delivery (Handfield & Bell, 1995). This begs the question what does inform such decisions? If the health care professionals are providing information and education based on their expertise and experience and women appear not to be making decisions based upon this, what is it that causes women approaching childbirth to hold such strong convictions that they can disregard this information and plan their own route to new motherhood?

A clue to at least part of this comes from an American study that examined women’s decisions about birth attendants. Women who chose a midwife over a doctor to deliver their baby felt more knowledgable, in control, satisfied, autonomous, instinctive, supported, and sympathetic with ‘alternative’ birth strategies than women who favoured obstetricians (Galotti, Pierce, Reimer & Luckner, 2000). Other women, however, may find confidence in the less intuitive, more formulaic approach of the obstetricians. MacDowell, Somoza, Rothe, Fry, Brady and Bocklet (2001) highlighted the more predictable nature of clinicians’ decisions in the construction of an ‘artificial neural network’ (a type of parallel computational model) that was found to predict the birth mode decisions of obstetricians with a high level of accuracy.

One study explored decision making in pregnancy in terms of risks and benefits (Wisner *et al.*, 2000). Whilst this study focussed on treatment for depression during pregnancy, the resultant model , which incorporates factors such as the structure of the problem and the likelihood of outcomes (from the physician’s perspective) and the characteristics influencing the decision from the patient’s perspective, can be a useful tool for interpreting the decision making process in a more general maternal population. McClain (1983) described a tendency for pregnant women to justify

decisions to themselves, once made. They do this by magnifying advantages and playing down disadvantages of the choice they have made, whilst doing the reverse for rejected options and their associated risks and benefits.

Davies (2004) advocated the engagement of women and their partners in making decisions for childbirth. However, in advising midwives how to do this responsibly, Davies suggests that women need to be made aware that midwifery is not and can never be an exact science. Therefore when making decisions a healthy dose of caution and realism is required in order that the woman can assume appropriate responsibility for her own safety. Davies also cautions midwives against fostering a sense of dependency in the woman, as this can lead to loss of control and self-esteem, which can impact severely on outcome, both physically and mentally.

Other variables that have been explored with regard to maternal decision making include socio-economic status. Béhague, Victora and Barros (2002) reported that women in Brazil who gave birth by elective caesarean tended to be from higher income groups and more educated than women who delivered vaginally. The authors suggest that this reflects the beliefs of women in this population that medical intervention represents superior care.

A Canadian study compared attitudes of obstetricians, family doctors and midwives on a range of maternity issues. These included medical interventions, location of delivery, support in labour, provision of information and, crucially in terms of the current study, the use of birth plans. Reime et al. (2004) found that obstetricians were most in favour of medical interventions and least in favour of birth plans. The midwives views were the opposite of this, whilst the family doctors attitudes fell between the other two professions.

The Royal College of Obstetricians and Gynaecologists (2001) make several recommendations to midwives regarding women's choices for pain relief in labour, which result from the findings of a study group. These recommendations include involving women in pain relief decisions and providing sufficient information that those choices can be properly informed.

Raynes-Greenow, Roberts, Nassar and Trevena (2009) developed a patient decision aid for pain relief in labour. The aim of using a decision aid in this context was to

reduce both uncertainty and anxiety and to improve knowledge and satisfaction. Whereas traditional decision aids often come in printed format, the aid trialled in this Australian study included a supplementary CD. However, the use of this additional audio component did not create any significant differences to simple pamphlet decision aids and were therefore deemed not cost-effective to use generally.

Carlton, Callister and Stoneman (2005) interviewed women regarding changes in pain management decisions before and during labour. They found that, whilst many women wanted to experience drug-free labour, factors such as pain intensity, prolonged labour, tiredness, unpreparedness, anxiety, tension and loss of control caused them to modify or abandon their original birth plans. Some women subsequently reported feeling disappointed that things had not gone to plan, whilst others were ambivalent or perfectly happy with their experience. The fact that the end result was a healthy infant seemed to offset negative feelings somewhat.

An Australian focus group study highlighted the discrepancy between what women think they know about labour analgesia and their actual knowledge about the risks and benefits associated with each method of pain relief (Rayes-Greenow, Roberts, McCaffery & Clarke, 2007). Most of their knowledge seemed to be anecdotal rather than evidence based, which has clear implications for those involved in childbirth education. More positively, women in this focus group were aware of the need for their decisions about pain relief to be flexible, due to the unpredictable nature of childbirth. They were very clear that they wanted to be active participants in the decision making process with their midwives, when it came to choosing pain relief.

Women described a sense of new identity following their pregnancy diagnosis, which was accompanied by a perception of ownership of the pregnancy and a responsibility to make informed choices (Jomeen, 2006). Women also described how their GP was key to accessing services and information and the effectiveness of this seemed to vary. Jomeen concluded that, despite issues of choice for women in maternity care being considered important for some time now, the translation of those ideals into reality can still be questioned in some instances.

Maternity care in the Netherlands is widely regarded as one of particularly good practice. Van der Hulst, van Teijlingen, Bonsel, Ekses, Birnie and Bleker (2007) report a Dutch study in which midwives were asked to consider who had the most

influence in making decisions relating to the care of a sample of newly delivered women. The seven most common maternity interventions were spread fairly evenly in terms of influence, with women themselves being the most pivotal in decisions to sweep the membranes and use pharmaceutical pain relief, midwives leading decisions about consulting or referring to an obstetrician, and obstetricians holding the most importance when it came to induction or augmentation of labour and assisted delivery. Van der Hulst et al. (2007) identify a possible tension between midwives' ideologies of non-interventionist births and women's own choices, particularly in the case of younger women who had greater influence in decisions than their older counterparts.

1.2.4 Autonomy. Having considered the nature of decision making for childbirth, this section examines the concept of autonomy and the ethical issues this presents in childbirth. The Royal College of Midwives defines normal childbirth as: "where a woman commences, continues and completes labour physiologically at term." (RCM, 2007). Furthermore, it advocates the safety of maternal choice. Prior to the RCM stating this definition, there was some criticism that childbirth had been allowed to become over technical and medicalised because midwives had not made clear what was meant by a normal birth, whereas obstetricians, on the other hand, had well identified what constituted an 'abnormal' birth (Gould, 2000).

Obstetricians and medical lawyers have argued when and to what extent maternal choice should stand (Brooks & Sullivan, 2002). Patient autonomy in childbirth could be compromised by the experience of labour as intense and painful. Brooks and Sullivan discuss whether women always have the capacity to make a decision during labour and consider what role birth plans have and to what extent they can act as advance directives. The ethical dilemma obstetric anaesthetists can face becomes exacerbated when women explicitly state in their birth plan that they want a drug-free labour and that even if during labour they ask for drugs, they are not to be administered. This is known as the Ulysses directive. The practitioner then has to decide whether the woman has the capacity to make a decision at that point in her labour. He/she can then either administer pain relief, which would relieve the patient's suffering and be considered beneficent but could lead to later legal proceedings due to her birth plan statement. Alternatively, drugs can be withheld in

accordance with the woman's antenatal wishes and the ethical, if not moral, stance would be upheld (Brooks & Sullivan, 2002).

Walton (2003) picked up on Brooks and Sullivan's arguments and reasoned that because the birth plan was made before the woman went into labour, it could not (at least in the case of primiparous women) have been fully informed as she had not experienced the pain of labour. Therefore, Walton argued, the autonomy of women in labour should be respected.

Perry and Quinn (2002) also drew attention to the "inadequate informed consent process" (p.12) in which women create birth plans. They argued that, whilst patient information is a useful tool, that alone is not enough to equip a woman sufficiently to make a birth plan that she expects to be fully adhered to. Ongoing discussion between women and health care professionals is required in order to adequately address the different options available. Perry and Quinn advocated that the development of trust between the woman and health care professionals is key to allowing such discussions and ultimately preserving autonomy on both sides.

A postnatal study in a hospital in Northern Ireland (Wallace & Hill, 2003) found that primiparous women tended to underestimate their need for pain relief and often requested epidural analgesia when they had not indicated that they wanted it, or even had indicated that they did not want it, on their birth plan. Despite this, none of these women subsequently regretted their decision to use epidural analgesia in labour and 98% reported that they would recommend it to a friend. This seems to show that treating the birth plan as a static document that cannot be amended once the woman has begun her labour is inadvisable.

A qualitative study by Callister (2005) investigated the reasons women change their plans during labour. The importance of the role played by the midwife was highlighted in terms of whether women felt disappointed, ambivalent or satisfied with their experience. Again, Callister emphasised the importance of issues such as trust, respect and dialogue in outcome perception.

Studies of women's mental states during childbirth do not support the capacity argument. Parratt and Fahy (2003) reported findings from an Australian pilot study that emphasized the benefits to women's sense of self in entering an altered state of

conscious during labour. If women being cared for in accordance with the midwifery model are being encouraged to 'release mind control', how then can they be judged to have capacity to make decisions? If women are 'zoning out' during childbirth then the importance placed on the birth plan must increase.

1.2.5 Birth Plans. This section now looks more specifically at the function, value and extent of use of birth plans in childbirth. The value of birth plans was recognised in the World Health Report (WHO, 2005), which identifies that even in developing countries there are choices to be made. Given the risks may be higher in developing countries, the birth plan is seen as a useful way to make women aware of their options and to voice preferences in advance of any emergencies. The message here is that birth plans are useful in encouraging dialogue between women and their health care professionals about the choices available and the risks and benefits associated with each. In the UK the concept of the birth plan is now more recognised and advice on creating a birth plan is readily available, such as on the NHS Direct website and in The Pregnancy Book (Department of Health, 2009), which at the time of writing was given to all primiparous women at their first midwife appointment in the NHS trust in which the study was conducted. The mixed messages women receive about birth plans is brilliantly illustrated by this publication. Here, a government authority, the Department of Health, has produced a book to which many major professional bodies have contributed, and which is being given to the woman by her midwife at their first meeting. Therefore it would be a fair assumption for the woman to consider it to be endorsed by the NHS and her care givers. It does indeed give some useful information on the sorts of things the woman may wish to consider in her birth plan. Alongside this information is a cartoon. This illustrates a pregnant woman giving her (lengthy and detailed) birth plan to a horrified looking midwife, with the caption: 'and if you want any more information.....' (Department of Health, 2009, p.37). The subliminal message here is that yes you have some choices but don't push your luck.

Robinson (1999) commented on the paradoxical nature of birth plans in that often it is the women with birth plans who ultimately require the most interventions and that the hospitals in which birth plans are probably most needed are the very hospitals to which women would be ill advised to present one. Robinson (1999), who was an honorary research officer of AIMS (Association for Improvements in the Maternity

Services), highlights that: ‘there was no other sphere of health care where people entering hospital felt compelled to list those interventions they wanted to avoid’ (p. 642).

An early champion of the birth plan was Sheila Kitzinger, who has written and spoken prolifically on the issue. In a groundbreaking book ‘Freedom and choice in childbirth; making pregnancy decisions and birth plans’, Kitzinger (1987) effectively challenges the arguments against birth plans; that planning is pointless, that it sets women up for failure, that it is selfish and inconsiderate towards the baby, and that birth plans put an obstacle between a woman and her carers. Kitzinger also points out that when hospitals give women pro-formas on which to complete a birth plan they are superficially appearing to support the woman in her right to choose, whilst giving a limited range of options in order to maintain what they see as acceptable limits and thereby are still exerting control over the woman’s choices (Kitzinger, 1987; 1992). Kitzinger conducted a content analysis on a range of printed hospital birth plans and found evidence in their design and wording to suggest that they were being used to manipulate women into compliance (Kitzinger, 1999). Kitzinger (1999) advocates the creation of a birth plan by the woman’s own design, as a process and a useful means of promoting effective communication between women and their care givers. Hamilton (1996) reported that a study of a sample of U.S. doctors and nurses attitudes towards birth plans showed an overwhelmingly negative response in both groups. This, Hamilton highlighted, is in direct contradiction to the promotion by the authorities, of consumer choice.

In a study that is one of the most closely related to the current research in this aspect to date, Brown and Lumley (1998) investigate the impact of birth plans on communication and decision-making in labour. This Australian survey design study tested more than one thousand women at least six months post-natally on a range of measures relating to birth planning, decision-making and care. Twenty percent of their sample had used a written birth plan and these women were typically young, single, of lower socioeconomic status, living rurally or suburban, having their first baby, English speaking and under team midwifery care (as opposed to having a private specialist obstetrician). Of these women, two-thirds regarded completing a written birth plan as a useful exercise ante-natally and fifty percent considered that their birth plan had been helpful during labour. The most beneficial aspect of writing

a birth plan was the opportunity to discuss options with care givers and express preferences in advance.

When Brown and Lumley (1998) compared women with a birth plan against those without a birth plan they found several statistically significant differences. Women with birth plans were happier with pain relief, felt more involved in decision-making, and felt that any doctors present during labour and birth kept their role to a minimum. Furthermore, women with birth plans were significantly less likely to have an operative vaginal delivery. No significant difference was found between the two groups on emergency Caesarean section rates, how women perceived midwives performance, the overall quality of care they received, or the access they had to information. Ultimately, however, a regression analysis showed that using a written birth plan was not associated with women's level of involvement in decision making related to her care.

The process of establishing a birth plan in discussion with a midwife was described by Doherty (2003) as comprising three patterns of interaction. These patterns represented firstly the encouragement by the midwife for the woman to create a birth plan, then a process of refining of the decisions occurred until finally an assessment of the plans viability was established. A Norwegian study evaluated a commonly used birth plan in that country using a questionnaire survey of pregnant women (Gulbrandsen, Aarseth, Aaby & Valdal, 2004). Although the birth plan, which gave women great scope to put forward their preferences, received a positive evaluation, women who used the birth plan still felt less safe during birth than women who did not use the plan. All women considered that, whilst they had been given much valuable information on pregnancy and childbirth, the information provided to them on early motherhood was less comprehensive.

A similar study of a UK hospital birth plan also showed that both women and their partners viewed the birth plan positively (very good, helpful and reassuring) (Ekeocha & Jackson, 1985). The majority of women completed the full plan and over half received exactly the care they had planned. The age of this study is reflected in some of the options on the plan, such as shaving and enemas. Whether an equivalent study today would give results such as 6 women volunteering for an

episiotomy and more having no strong views on the subject than would wish to avoid it, is doubtful.

An interview study of 40 women in Australia showed that women were divided in their opinions on the usefulness of writing birth plans (Peart, 2004). Half of them felt that creating a birth plan had been pointless and few of these intended to use one in future pregnancies. However, others were more positive and understood the need to be flexible with them depending on the events of labour. Birth plans received a more positive review, however, in an earlier Australian study using a survey design (Moore & Hopper, 1995). Ninety-five percent of women reported that they had found the birth plan useful in making them aware of the childbirth process and their options, as well as serving as a useful channel of communication and dialogue between themselves and their midwives. Women were willing to recommend the use of birth plans to friends after using the hospital birth plan under evaluation and Moore and Hopper concluded that the practice has increased women's confidence and sense of empowerment.

Too (1996a, 1996b) explored the pivotal role of the midwife in achieving a sense of empowerment in labouring women by the heed they give to the woman's birth plan. These British interview studies looked at both the views of the women who had used a birth plan and midwives. The former group described how the birth plan had improved their knowledge about childbirth and consequently led to their decision making being more informed. They expressed a desire to feel in control during labour and the need for support and advocacy from their midwives. They also reported feelings of disempowerment when they felt unsupported by their midwives, whether that was due to disinterest or constraining issues. (Too, 1996a). Similarly, the midwives reported a common philosophy of midwifery care, saw benefits in the use of a birth plan, advocated patient decision making to varying degrees, relied on stereotypes of women (particularly the 'interested / disinterested' labels), expressed their frustration at constraining factors, and were keen to develop their professional accountability and autonomy (Too, 1996b). These appear to be two sides of the same coin and Too (1996a) recommends continuity of care as a way forward to achieve a sense of empowerment in both expectant women and their midwives.

Continuity of care is a concept central to the NICE clinical guidelines for antenatal care (2008). This guideline states:

> 'The "Changing childbirth" report (Department of Health, 1993) and "Maternity matters" (Department of Health, 2007) explicitly confirmed that women should be the focus of maternity care, with an emphasis on providing choice, easy access and continuity of care. Care during pregnancy should enable a woman to make informed decisions, based on her needs, having discussed matters fully with the healthcare professionals involved.' (www.nice.org.uk, guideline 62, p.5-6).

This statement explicitly links the concept of continuity of care with the woman's entitlement to make informed decisions about her care based on good communication with her care givers.

Carty and Tier (1989) embrace the concept of making birth plans and furthermore advocate a full rehearsal of the birth using the plan in the woman's home. This, Carty and Tier suggest, is a useful way of evaluating both the usefulness of the plan and the care received in advance of the actual event. It would seem that this is a good way of managing expectations but does not appear to have become common practice beyond Canada where it was first established. The fact that these visits appear to be quite demanding upon midwives time is a likely factor in its lack of popularity amongst policy makers.

A study of women in Scotland who had recently delivered their first baby showed that ninety percent of women in the sample had used a birth plan and found the completion of such helpful in exploring options and communication with health workers (Whitford & Hillan, 1998). Half of these women reported that their birth plan had not contributed to their feelings of control during labour, despite women in Too's (1996a) study citing this as important. However, women in Whitford and Hillan's (1998) study did feel that staff had not paid sufficient attention to the content of their birth plan and therefore this could have been a resultant effect of the culture in that particular site. However, despite the apparent lack of value placed on birth plans by staff in this study, women were not deterred and reported that they intended to make birth plans again in any subsequent pregnancies. Again, this is in contrast to the

women in Peart's (2004) study where many women seemed reluctant to repeat the exercise.

Simkin (Simkin & Reinke, 1980) was one of the first authors to describe the birth plan as a channel of good communication and informed decision-making. Nearly thirty years later she advocated training for health care professionals on the integral role of patient choice in their care (Simkin, 2007). That this battle continues in some areas of medicine and nursing is evidence that Simkin's original explanation of the purpose of the birth plan was never adequately heeded and a culture of mistrust on both sides consequently developed.

Simkin was the pioneer of the birth plan in the United States and it was after discussion with Simkin that Kitzinger famously championed their use in the UK (Nolan, 2004). Since then the practice of writing a birth plan has varied in popularity. Today it is standard practice in many NHS trusts to offer women the opportunity of creating a birth plan, whether that is on a standard pro-forma or in an open ended format. Nolan (2004) cites the advantages and disadvantages of birth plans and it is notable that all the advantages benefit the mother and all the disadvantages relate to difficulties for hospital policies and practices. This tension is addressed by Lothian (2006). Here, the conflicting beliefs regarding the representation of safety in childbirth, good practice in maternity care, and the ethics of consent are explored. Lothian (2006) suggests that tensions exist due to two very different beliefs about the nature of birth. On one side is the belief that women's bodies are designed to birth a baby and that left to its own devices is usually able to do this very successfully. This school of thought emphasizes the woman's need to listen to what her body is telling her to do, to let the power of nature take over and to trust in her instincts and ability. The alternative view is that childbirth is fraught with risk and danger and must be carefully monitored and managed throughout in order to ensure the safety of both mother and child. The difficulty the 'naturalists' have with this view is that, firstly the woman becomes fundamentally disempowered, and secondly that there is considerable evidence to show that one intervention often escalates and the need for further interventions arise consequently (Lothian, 2006). More positively, Lothian acknowledges that maternity care is becoming increasing evidence-based and that as a consequence women in the future may not feel the need to arm themselves with

a birth plan in a bid to try to protect themselves from what they see as unnecessary interventions.

More recently, a Canadian study highlighted the differences between the 'natural' and the 'medical' birth philosophies in both women and their caregivers in testing a new birth philosophy scale (Wilson & Sirois, 2010). Women with 'natural' birth philosophies and had midwives as their primary carers expressed greater satisfaction with their birth experiences and birth attendants than women with 'medical' birth philosophies. These birth philosophies lay behind attitudes and discourses expressed by women who had undergone difficult operative deliveries (Pope, 2003). For these women, their experience was disparate from their ideal and/or expected birth and this had implications for both outcomes and anticipated future births.

In order to evaluate the usefulness of a birth plan empirically, Lundgren, Berg and Lindmark (2003) gave 271 third trimester women a questionnaire assessing their attitudes and feelings towards the pending birth. These women were then invited to write a birth plan, which was available to the midwife during labour and delivery. This intervention, however, did not improve the experience of these women compared with a no-intervention control group. Lundgren et al. (2003) did acknowledge, however, that for some women the process of creating a birth plan was beneficial in terms of discussion, clarification of preferences, and allaying fears and anxieties. These benefits concur with the original purpose of the birth plan as promoted by advocates such as Simkin and Kitzinger in the early 1980's. The suggestion that simply using a birth plan can improve a childbirth experience is a modern misperception from the intended design and purpose of the exercise.

On the opposite side of this misperception is the possibility that birth plans might actually have a negative impact upon the outcome of labour (Jones et al., 1998). As previously stated, there exists something of a paradox in that women with the most detailed birth plans seem to be the ones for whom the birth requires the most interventions. It may be because these women are the most anxious and feelings of anxiety are not conducive of a natural, relaxed childbirth. However, Jones et al. (1998) suggest that the negative reception women with birth plans receive from maternity caregivers may be a factor in adverse outcomes. In their British sample

significantly more women without a birth plan managed to avoid interventions than those with birth plans. Midwives in this study cited the sources of their irritation at birth plans as, for example, women requesting to avoid practices that were abandoned over two decades ago, such as shaving and enemas. For the midwives, such statements reflected a lack of understanding of modern midwifery and were suggestive of a certain mistrust, as in the case of women who state that they would only consent to an episiotomy if absolutely necessary. This may be perceived as offensive to a midwife as episiotomies are never performed unless absolutely necessary by midwives (Jones et al., 1998).

A study of a similar nature but from an obstetric perspective focussed specifically on the operative delivery rates of British women with birth plans (Smoleniec & James, 1992). In this sample, no difference in operative delivery rates (whether instrumental vaginal or caesarean section) was found in women with or without birth plans. These findings, from a South West England maternity unit are at odds with those of Jones et al., six years later in South East England. In actual fact, in Smoleniec and James' study, women with birth plans had two per cent fewer caesarean sections than women without a birth plan (though this difference was not statistically significant). Smoleniec and James put this small difference, which was not observed in instrumental vaginal delivery rates, down to less use of epidural anaesthesia in women with birth plans.

In a completely different setting, in the form of a Naval Medical Centre in Maryland, US, Deering, Heller, McGaha, Heaton and Satin (2006) investigated the profile of the average birth plan author, the most common birth plan requests, and outcomes for women with birth plans. The women with birth plans tended to be older, primiparous, married, and well educated. Common requests on birth plans included mobility during labour, avoidance of episiotomy, no pharmacological analgesia, avoidance of epidural, taking drinks during labour, and avoiding continuous foetal monitoring. The majority of deliveries in this unit were performed by obstetricians. Outcomes for this sample were spontaneous vaginal delivery for the majority, with an episiotomy rate of 24% and an epidural rate of 60%. Although 62% of women in the sample stated in their birth plan that they did not want an epidural, 60% of these changed their minds in labour and elected for epidural anaesthesia. This change emphasises the need for

the birth plan to be seen as a work in progress, to be open to amendment and honest discussion on both sides.

Birth plan use in another non-UK sample offers further comparisons as to the function and value women perceive the plans serve. Yarn, Grossman, Goldman and Garcia (2007), investigated a Mexican sample with low socio-economic status. Childbirth has become highly medicalised in this setting and the concept of birth plans is a novel one. From interviews, Yarn et al. (2007) established that women who had used birth plans felt that they had greatly benefitted from them. In addition, practitioners received the concept of plans for birth positively but could foresee difficulties in their implementation due to financial and resource restrictions.

Cross-cultural differences in perceptions of childbirth are striking in a study based in rural Uganda (Mulogo et al., 2006). In a combination of interview and survey techniques, it was established that women in these remote districts were creating birth plans to communicate their desire to deliver their babies in the safety of the health facility as they perceived home birth as potentially dangerous to the well-being of both mother and baby. Clearly this is a vastly different experience to the Western woman taking on the medical world in a bid for her desire for a home birth to be heard and taken seriously. Nonetheless, both women are using their birth plans to communicate the way they want to birth their babies with their care givers, a use for which it was intended, regardless of the nature of those choices.

1.2.6 Psychological well-being in pregnancy and post-natal outcomes.

Having considered the use of birth plans by women in childbirth, this section now examines the literature on post-natal well-being as an outcome of childbirth. Thirty years after the introduction of birth plans, Sheila Kitzinger runs a support network of help lines for women who feel traumatised by their childbirth experience (www.sheilakitzinger.com/Birthcrisis). Her vast experience of speaking to women in this network led her to publish a book on trauma from childbirth (Kitzinger, 2006). Here Kitzinger condemns the reception with which women who use a birth plan are sometimes greeted by maternity care staff. However, Kitzinger states that it is not only women who have given birth recently who contact her for help with trauma but women who had their babies many years ago and who have been suffering adverse psychological consequences ever since. The problems associated with post-natal

depression have received a great deal of attention over recent years but trauma has only recently begun to be acknowledged as an issue in this context.

Leeds and Hargreaves (2008) investigated levels of PTSD in women 6-12 months postnatally and found 3.9% responded with clinical levels of PTSD and a further 19.6% experienced sub-clinical symptoms. PTSD symptoms were predicted by unexpected interventions during childbirth, higher levels of depression and anxieties about the baby. In addition, 21.5% of women in the sample recorded clinical levels of depression, which was associated with a history of mental health problems and PTSD symptomatology. Therefore, approximately one in five women were found to still be experiencing some trauma related symptoms and/or depression at least six months post-partum. This has serious implications for the psychological well-being of new mothers and their ability to bond with their infants.

The possible causes of such adverse psychological outcomes for many women were investigated by assessing women's worries during early pregnancy by Jomeen and Martin (2005). Despite a body of evidence claiming that relationship concerns around the emotional support available from the woman's partner is a significant concern to women, Jomeen and Martin showed that depressed women were rather more concerned with medical, health and financial issues than they were with their partners.

Concerns of women in pregnancy were also the focus of a large study that examined the changes that had occurred since earlier research (Green, Coupland & Kitzinger, 1998) and the publication of Changing Childbirth (DoH, 1993). Green, Baston, Easton and McCormick (2003) found that women were increasingly worried about labour pain, increasingly wanted a pain-free labour (and were therefore more likely to use epidural anaesthesia), were less likely to use breathing and relaxation techniques, and, in line with other cited research, were more likely to use epidurals when they had expressed an antenatal preference against them. In addition, vaginal deliveries had decreased, whilst caesarean sections had increased correspondingly, rises were also reported in the levels of induction and accelerated labour, electronic foetal monitoring, and willingness to accept interventions. Rates of perineal trauma and episiotomy had declined, along with expectations that they would know their delivery midwife, expectations of having one continuous midwife through labour, use

of positive words to describe their feelings during labour, and ability to get comfortable in labour. Further increases were observed in communication with caregivers, involvement in decision making, and feeling in control. Post-natally, rates showed no overall difference in breastfeeding, descriptions of the baby, satisfaction or emotional well-being. Finally, primiparous women reported less fulfilment in their experience of birth. Many of these findings seem to run contrary to the aims set out in the Changing Childbirth document, though it is interesting to note that the data gathered in 'Greater Expectations' compared data gathered in 1987 with equivalent data from 2000. It will be interesting to compare this with the findings from the current study a decade later.

Women in North West England responding to an open question post-natally regarding the important factors in their birth experience cited support, information, intervention, decision making, control, and pain relief, based on a thematic analysis (Lavender, Walkinshaw & Walton, 1999). Similarly, Goodman, Mackey and Tavakoli (2004) investigated factors in childbirth satisfaction in a quantitative study in the US. Personal control emerged as the most significant predictive factor in childbirth satisfaction, whilst having expectations met was predictive of women's own personal performance satisfaction. This suggests that women felt they had done well when events in childbirth were played out in accordance with their anticipated script. Interestingly, in this study, pain was not predictive of childbirth satisfaction.

The issue of control was explored in more depth in the 'Greater Expectations' data by Green and Baston (2003). They distinguished between internal and external control and found that women generally reported more internal control (control of themselves) than external control (control of staff), though multiparous women reported greater control overall than primiparas. Both of these forms of control, as well as being in control during contractions, were independently significant predictors of childbirth satisfaction.

Self-efficacy is another variable that has been investigated in terms of its impact on childbirth satisfaction. Berentson-Shaw, Scott and Jose (2009) found that higher levels of childbirth self-efficacy were significant predictors of childbirth satisfaction, as well as of lower labour pain experiences. Williams, Povey and White (2008) also investigated the role of childbirth self-efficacy, this time in predicting pain relief

strategies. However, childbirth self-efficacy was not found to be a significant predictor of women's use of any of the three pain relief methods investigated (entonox, pethedine or epidural). An earlier study of childbirth self-efficacy showed that multiparous women were more likely to choose vaginal birth after caesarean (VBAC) if they had high levels of self-efficacy (Dilks & Beal, 1997).

Whilst it is important to establish factors related to positive experiences of childbirth, it is also important to understand what may lead to a more negatively perceived childbirth experience. In a Swedish longitudinal study, Waldenström, Hildingsson, Rubertsson and Rådestad (2004) found several significant predictors of a negative birth experience. Unexpected and undesirable events occurring during labour that led to emergency medical interventions were one common risk factor, along with social factors such as a perceived lack of support from the partner or caregivers and lack of time for questions and discussion related to care.

The impact that a negative birth experience has on subsequent births was investigated by Thomson and Downe (2010). Using an interpretative phenomenological approach, four themes were identified that were concerned with resolution, connectivity, redemption and transformation. These themes underpinned the constitutive theme of 'changing the future to change the past'. This study explores the healing process that women undergo in order, not just to have a more positive birth experience than previously, but also to help them come to terms with and overcome the trauma of the negative experience.

Robb, Alder and Prescott (2005) investigated whether age had an impact on psychological well-being in pregnancy. They compared younger primiparas (20-30 years) with older first time mothers' (35+) scores on the General Health Questionnaire and found no significant difference between the two age groups, despite a minority from both groups scoring at the high end of the scale suggesting possible psychiatric morbidity.

The Edinburgh Postnatal Depression Scale (EPDS) (Cox, Holden & Sagovsky, 1987) has been used extensively in both health visitors' assessments and research and has been shown to be a robust and largely accurate tool for identifying psychological morbidity in both late pregnancy and post-partum. Jomeen and Martin (2005) evaluated the EPDS in women at 14 weeks gestation in a bid to assess its

performance in early pregnancy. They found that, in line with research at later stages of pregnancy and post-natally, the EPDS contains bi-dimensional factors measuring both depression and anxiety. However, White, Matthey, Boyd and Barnett (2006) address the possibility that routine use of the EPDS, whilst highly effective at identifying cases of depression and anxiety, may miss cases of PTSD. White et al. assessed symptoms of birth trauma in 400 women in Australia at birth, then 6 weeks, 6, and 12 months post-partum. They found that roughly 2% of the sample reached clinical levels in their PTSD scores, which remained quite stable across all four time points. Women who were experiencing PTSD also tended to score high on the EPDS, indicating high levels of co-morbidity between the two conditions.

The EPDS was further tested by McVey and Tuohy (2007) who found a third factor within the scale in addition to depression and anxiety, which they termed anhedonia. This term is defined by Treadway and Zald (2013, p.53) as “a lack of ability to enjoy every day pleasurable experiences.” When McVey et al. regressed each of these on three predisposing risks for PND they found that changes in relationship quality and both the availability of and satisfaction with social support all independently predicted depression. However, none of the risk factors predicted anxiety and only relationship changes predicted anhedonia. The impact of antenatal predictors on PND was investigated by Ingram and Taylor (2007). They found that antenatal depression, poor emotional support during pregnancy and negative descriptions of their own childhood combined to predict high scores on the EPDS post-natally. Castle, Slade, Barranco-Wadlow and Rogers (2008) supported these findings in the experiences of both mothers and fathers. Couples who perceived that they had higher levels of social support during the antenatal period experienced less psychological distress post-natally than those with weaker perceptions of social support.

1.3 Rationale

Following a review of the background literature to this study, the rationale and aims are set out in this section. Table 1.1 identifies the main studies that are considered to be particularly relevant to the current research.

Table 1.1

Main studies of relevance to the current research.

Paper	Related variables
Brown & Lumley (1998)	Birth plan use, birth plan value, pain control, decision making.
Ekeocha & Jackson (1985)	Birth plan use, birth plan value, parity.
Goodman et al. (2004)	Control, childbirth expectations, childbirth self-efficacy, pain control, childbirth satisfaction.
Green & Baston (2003)	Control, pain control, parity, age, ethnic group, occupational group, post-natal psychological outcomes, childbirth satisfaction.
Lavender et al. (1999)	Social support, information, decision making, control, pain control.
Lundgren et al. (2003)	Birth plan use, childbirth experience, control, pain control, social support, midwife relationship, age, occupational group, parity.
McCrea & Wright (1999)	Control, pain control, childbirth experience, age, parity, occupational group.
Moore & Hopper (1995)	Birth plan use, birth plan value, age, ethnic group, parity, antenatal education, childbirth self-efficacy.
Waldenström (1999)	Parity, childbirth expectations, age, ethnic group, control, decision making, childbirth experience, social support.
Waldenström et al. (2004)	Control, pain control, social support, post-natal psychological outcomes, age, occupational group, parity, antenatal education.
Whitford & Hillan (1998)	Birth plan use, birth plan value, control, birth plan adherence.

It is evident from table 1.1 that research has concentrated largely on a fairly broad range of variables, namely: age, occupational group, ethnic group, parity, birth plan use, adherence and value, control, pain control, self-efficacy, childbirth satisfaction, expectations and experience, antenatal education, decision making, social support,

midwife relationship and post-natal psychological outcomes. These variables were therefore also included as the basis for the current study.

Additionally, Lavender at al. (1999) identified information as relevant to women's birth experiences. This theme was added to the current study as a variable in order that, together with decision making and antenatal education, the impact of cognitive information processing on the childbirth experience could be further explored. This new angle then led to the consideration of the underpinning attitudes the women may hold towards doctors and medicine. Such attitudes could arguably colour women's approach both to their childbirth plans and to the maternity staff involved in their care. This could potentially impact on other variables such as locus of control, upon which the measure was developed. Attitudes towards doctors and medicines had not previously been considered in the literature, despite the measure having been developed on an antenatal sample. Therefore this variable was included to increase the scope of understanding of the picture as a whole.

Furthermore, during the literature search it was noted that the health of participants was not considered. It seemed reasonable to suggest that factors such as the general health of the pregnant woman, any existing medical conditions or pregnancy complications, and the woman's understanding of these, may ultimately affect decision making and approach to childbirth. Consequently these variables were included in the current study in order to explore any impact they may have that had not previously been addressed in the literature.

The final variable, coping, emerged not from the literature but from observations of midwifery classroom discussions and texts. Whilst, as table 1.1 shows, the concept of control is widely researched in the childbirth context, very little attention has been paid to coping. However the issue of how women cope with labour and delivery was noted as a resurfacing issue in the learning and teaching environment. The literature tends to focus more on coping in the context of the post-natal period and largely in terms of lack of coping and the implications of this for perinatal mental health. The focus of this study was not designed to be around post-natal distress but rather on psychological factors in childbirth more generally. Therefore, in a further innovation in the current research it was decided to explore the coping styles of participants in

order to establish whether they had any impact on decision making for childbirth or post-natal psychological outcomes.

Research questions

The study aimed to address the following research questions:

1. What factors influence women's use of birth plans and what types of decisions are made in them?
2. What are the post-natal psychological outcomes for women based upon social, health and psychological factors, and the existence, nature, complexity and evaluation of birth plans?
3. Do women score differently on the scales between pregnancy and the post-natal period and how does this compare with scores from non-pregnant women on the same scales?

Chapter 2 - Method

This chapter explains how the research was carried out. Firstly the design of the study is outlined in terms of the groups, time-points and variables. The two samples recruited, including size and ethical considerations, are described in the participants section that follows. The measures that were implemented at both time points and with each group are then detailed, followed by the procedure for conducting the study. Finally the plan for the analysis of the data is then set out in preparation for the subsequent results chapters.

2.1 Design

This study compared both pregnant and non-pregnant women on a range of scales, as well as pregnant women at two time points – pre-natal and post-natal. The following variables were investigated within these contexts: age; occupation; ethnicity; parity; ante-natal education; birth plan usage; medical conditions; general health status; health knowledge; information acquisition; birth expectancies and experiences; birth plan evaluation; number and type of decision in birth plan; attitudes towards doctors and medicines; health control; coping; perceived social support; pain control; childbirth self-efficacy; birth story valence; and post-natal well-being.

The two time points of testing were selected in order to identify any changes that occurred on any measures between pregnancy and childbirth. However, these in isolation could illustrate only the position of these factors under those particular conditions. The question remained as to what these factors might have measured with the states of pregnancy and the post-natal period removed. In presenting the core measures that were used in both time points T1 and T2 in the pregnant sample to a comparison group of non-pregnant women who had not recently given birth, a reference point was created against which scores could be compared.

2.2 Participants

2.2.1 Pregnant sample. Women were recruited to the study from 28 weeks of pregnancy. This point was selected as convenient and appropriate as during the third trimester of pregnancy women may be more focussed on their plans for labour and delivery and they also have appointments with their midwives at this time.

2.2.1.1 Ethics. The target for the pregnant sample was 120 pregnant women. In order to achieve this sample, an ethics application was made to Cheshire Research Ethics Committee via the Integrated Research Application System. In addition, approval was granted by the Western Cheshire Primary Care Trust's Research and Clinical Audit Sub-Committee. Women aged 18 and above were eligible for participation in the study as, although the legal age of consent is 16, ethical issues related to participation of minors could then be avoided.

2.2.1.2 Power analysis. A power analysis showed that 120 complete cases were required for the design and the closest studies in similarity to this reported response and completion rates at an average of 50% (Reime et al., 2004; Brown & Lumley, 1998). Therefore a total of 250 pregnant women were targeted based upon the following assumptions:

1. The proportion of variance accounted for by the independent variables is around 20% (omega-square of 0.2).
2. The type one error rate (alpha) is set at $p = 0.01$.
3. The acceptable power level for the statistical test is set at 0.95.

From Hays (1994), Table XII (p.1038), it would appear that 15 cases per cell would be required to meet the above assumptions. A design with a maximum 8 cells would therefore require a total of 120 completed cases for this power calculation. It was not anticipated that analysis of the resultant data would require anything in excess of 8 cells in order to address the research questions.

2.2.2 Comparison sample. A comparison sample of 140 women aged between 18 and 50 were recruited using opportunity sampling. Participants were required to match closely to the pregnant sample, therefore only women were included. The age restriction was imposed in order to obtain a comparison sample of reproductive age, as the pregnant sample was. The majority of women are past their reproductive phase by the age of 50 and, although women can reproduce before the age of 18, ethical approval was not sought for the participation of minors in this study, therefore 18 was the appropriate lower age limit. The only other inclusion criterion for the comparison sample was that they should not have been pregnant in the previous year. This was so that any psychological influences from a recent pregnancy could not play a role in the responses given to the measures.

The comparison sample were recruited by a small group of second-year undergraduate psychology students as part of an experiential research module. These students were briefed on the aims of the study, the inclusion and exclusion criteria and the ethical protocol of recruitment. The materials designed for the recruitment of this group were used by all of the students to ensure consistency both within the comparison sample and between this and the pregnant sample (see Appendix A for a summary table of demographics across both samples).

2.3 Measures

2.3.1 Pregnancy measures – pre-natal. Whilst it was necessary to the study to investigate a range of factors that potentially impact on health care choices, care was required in order that the questionnaire was not too long and arduous for participants. For this reason, some sub-scales were omitted from the measures used. Where this occurred, the rationale for selection of subscales is explained. The entire questionnaire can be found in Appendix B and is summarised in table 2.1:

Table 2.1

Measures incorporated in the pre-natal questionnaire by section

Section	Measure
A	Demographic questions: age, occupation and ethnic group parity, ante-natal education, birth planning, and medical conditions
B	General health status and health knowledge
C	Information provision, locating, and questioning midwife
D	Attitudes towards Doctors and Medicines Scale (ADMS)
E	Multidimensional Health Locus of Control Scale (MHLC) (Form A)
F	Cybernetic Coping Scale (CCS) short (15 item) version
G	Multidimensional Scale of Perceived Social Support (MSPSS)
H	Beliefs about Pain Control Questionnaire (BPCQ)
I	Birth expectancies
J	Birth plan description
K	Childbirth Self-Efficacy Inventory (CBSEI)

2.3.1.1 Section A – Demographics. Section A asked for demographic information: age, occupation and ethnic group. This was in order to enable the comparison of the women against the non-pregnant group on these factors. Age was given in years. Participants were asked to describe their main occupation in their own way (open-ended). Categorisation of these occupations was carried out during data input, based upon a simplified adaptation of the analytic classes and operational categories and sub-categories of NS-SEC (www.ons.gov.uk/about-statistics/classifications/current/ns-sec/cats-and-classes/analytic-classes/index.html). A single category was formed from category L14 (Never worked and long-term unemployed), which was labelled ‘Unemployed’. Category L15 (Full-time student) remained simply ‘Student’. The category ‘Home-maker’ was introduced as

appropriate to the nature of the study as a whole. Categories L13 (Routine occupations), L12 (Semi-routine occupations), and L11 (Lower technical occupations) were merged to form two categories, labelled 'Unskilled worker' and 'Skilled worker'. Categories L5 (Lower managerial occupations) – L10 (Lower supervisory occupations) were grouped as 'White collar workers', and categories L1 (Employers in large organisations) – L4 (Lower professional and higher technical occupations) became 'Professional'. Ethnic group was also asked for in an open-ended question and later categorised based upon the standard way of collecting data based on ethnic group recommended by the Office for National Statistics (www.ons.gov.uk/search/index.html?newquery=ethnic+group). In order to avoid having too many small sample numbers in some categories, the 'Chinese' group were included in the 'Other' category for the purposes of this research, thus the groups were: White / White British; Black / Black British; Asian / Asian British; Mixed; and Other.

2.3.1.2 Sections B & C – General health status & health knowledge.

Section B asked about the participant's general health status. Participants were asked to rate their general health on a scale of 1 – 10 where 1 = very poor and 10 = excellent. This scale was also adopted in Section C, which asked about participant's health knowledge. Section C was extended for the pregnant sample to include questions on the provision of information, locating information, and asking the midwife questions. Each of these three additional questions were rated on a five point scale from strongly disagree to strongly agree.

2.3.1.3 Section D – Attitudes towards Doctors and Medicines Scale (ADMS).

Section D was based upon the Attitudes towards Doctors and Medicine Scale (ADMS) (Marteau, 1990) and was comprised of two subscales: Positive Attitude towards Doctors (α = 0.76); and Positive Attitude towards Medicine (α = 0.67) (Marteau, 1990). These two subscales were selected in preference to the Negative Attitude towards Doctors and the Negative Attitude towards Medicine subscales for two reasons. Firstly, the negative subscales could be argued to be the antithesis of the positive subscales. Secondly, the positive subscales were comprised of fewer items than the negative. This resulted in a total of eight items, all of which were positively scored, with four items in each subscale. The scoring range on each subscale was 4 – 24. The scale was from 1 (strongly disagree) – 6 (strongly

agree). Therefore a higher score on each subscale reflected a more positive attitude towards that subscale object. The ADMS was originally designed in England with a sample of women attending antenatal appointments, making it appear particularly appropriate in this study. However, Conroy, Siriwardena, Smyth, McGee and Fernandes (2000) were unable to replicate the factor structure in an Irish sample of GP patients (male and female) and found lower reliability scores for both Positive Attitudes towards Doctors and Medicines. Subsequently, Conroy et al. (2002) identified that women attending antenatal appointments rated doctors and medicines more positively than general practice patients on the ADMS. Marteau (1990) also tested the validity of the scale on antenatal patients, first year medical students, senior nurses and behavioural scientists (sociologists and psychologists) based in medical schools. Results from women attending antenatal appointments were comparable to those of the medical students, with both groups scoring more positive attitudes towards doctors and medicine than nurses and behavioural scientists. The ADMS has subsequently been used in studies of general health care attitudes (Pereira, Araújo-Soares & McIntyre, 2001), large health care consumption (Little et al., 2001a, 2001b; Pereira, Barbosa, deSousa, Santiago & Lima, 2002), care-seeking behaviour (Wasylkiw, Gould & Johnstone, 2009), treatment adherence (Pereira & Silva, 2002; Cassar, 2003), and diagnosis acceptance (Andrade & Fontaine, 2000; Rolim & Zagalo-Cardosa, 2005).

2.3.1.4. Section E – Multidimensional Health Locus of Control Scale (MHLC). Section E focussed on the issue of control and utilised two subscales from the Multidimensional Health Locus of Control Scale (MHLC), Form 'A' (Wallston, Wallston & DeVellis, 1978). The selected subscales were Internal items and Powerful Other items. Each of these subscales contained six items. The Chance subscale items were omitted as being of less concern in this study than internal locus of control and the belief that powerful others, particularly health care professionals, have control over one's health. All items were positively scored and the scoring range on each subscale was 6 – 36. The scale was from 1 (strongly disagree) – 6 (strongly agree). Therefore a higher score in each subscale reflects a stronger belief in that source of control. These two subscales were identified as statistically independent (Wallston et al., 1978). The MHLC was constructed as a general measure, adaptable to a range of conditions and situations and has been

widely used as such (Luszczynska & Schwarzer, 2005). Wallston et al. (1978) based the MHLC on social learning theory, which suggests that control may be located either internally or externally to oneself, and applied this concept to health. Form 'A' was selected in preference to Form 'B' based on the wording of the questions being slightly more relevant to the current study. However, the condition specific Form 'C' was not adopted in this study as it was considered inappropriate for three reasons. Firstly, the comparison sample would not have been able to complete it as this sample was a general population who may or may not have had a range of health conditions, whereas Form 'C' is designed to be specific to any one nominated condition. Secondly, it seemed inappropriate to regard pregnancy as a chronic health condition or illness. Thirdly, Form 'C' has been shown to be less useful than Forms 'A' or 'B' in pregnant samples (Ip & Martin, 2006). Similarly, the Fetal Health Locus of Control Scale (Labs & Wurtele, 1986) was not used as it would have been inapplicable to a comparison sample and is far less established than the MHLC scale. Consequently, MHLC Form 'A', with reliabilities of between 0.67 and 0.77 was deemed, on balance, to be the most appropriate tool to assess any perceived differences in internal or external control between pregnant and non-pregnant women.

2.3.1.5 Section F – Cybernetic Coping Scale (CCS) short (15 item) version. Section F asked about coping and items were taken from the short (15 item) version of the Cybernetic Coping Scale (Guppy, Edwards, Brough, Peters-Bean & Short, 2004). This measure contains five coping subscales (Change the Situation, Accommodation, Devaluation, Avoidance and Symptom Reduction) based on Edwards' (1988, 1992) cybernetic theory of stress, coping and well-being. According to cybernetic theory, stress occurs when one's actual state falls short of their desired state, thereby having an impact on well-being and requiring the use of coping strategies to remedy the situation (Edwards, 1992). The CCS was originally devised in a 20 item format by Edwards and Baglioni (1993). This version was event focussed and the 15 item version was preferred in this study for both its brevity and its more dispositional focus. All 15 items were positively scored and scoring ranged from 3 – 15 on each subscale. The scale was from 1 (never) – 5 (always). Therefore a higher score on each subscale reflects greater use of that coping strategy. The five sub-scales from the 15-item version (Guppy et al., 2004) had reliability values of

between 0.68 and 0.88 across four studies. The CCS was selected for this study in preference to other coping measures based on the theoretical and methodological issues raised in Guppy et al. (2004) with alternative coping scales.

2.3.1.6 Section G – Multidimensional Scale of Perceived Social Support (MSPSS). Section G measured perceived social support using the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988). This is comprised of three subscales: Significant Other; Family; and Friends. All three subscales were used in their entirety as they were all considered to be of relevance to the study and each subscale comprised only four items. All items were positively scored and the scoring range on each subscale was 4 – 28. The scale was from 1 (very strongly disagree) – 7 (very strongly agree). Therefore a higher score represents higher perceived social support on that subscale. The measure as a whole has a reliability of 0.88, with subscales achieving scores of 0.72 (Significant Other), 0.85 (Family) and 0.75 (Friends) (Zimet et al., 1988). The MSPSS was first developed using a sample of undergraduate students. It has since been used in a wide variety of settings, including many health contexts. Zimet et al. (1988) observed that measuring perceived social support, rather than actual social support, provides a better indicator of psychological well-being and vulnerability to stress.

2.3.1.7 Section H - Beliefs about Pain Control Questionnaire (BPCQ). Section H addressed pain control and was based upon two of three subscales from the Beliefs about Pain Control Questionnaire (BPCQ) (Skevington, 1990). The two subscales used were Internal (five items) and Powerful Doctors (four items). The omitted subscale Chance Happenings was deemed of less relevance to this study. All remaining items were positively scored and scores ranged from 5 – 30 for Internal items and 4 – 24 for Powerful Doctor items. The scale was from 1 (strongly disagree) – 6 (strongly agree). Therefore a higher score on each subscale represents a stronger belief in that source of pain control. The Chance Happenings sub-scale was omitted as it had weaker reliability ($\alpha = 0.56$) and was deemed of less relevance to the current study than the Internal subscale ($\alpha = 0.73$) and the Powerful Doctors subscale ($\alpha = 0.82$) (Skevington, 1990). The BPCQ was designed based on the principles of locus of control, in the same way as the MHLC. However, Skevington (1990) responded to an increasing awareness of a need for more specific measures

that were fit for purpose, in this case, measuring beliefs about the location of pain control.

2.3.1.8 Section I – Birth expectancies. Section I asked participants to rate their birth expectancies on a scale of 1 – 5, based on how positive they expected the experience to be. A score of 1 represented very negative expectancies and a score of 5 represented very positive expectancies.

2.3.1.9 Section J – Birth plans. Section J was an open section where participants were invited to write down any decisions they have made about what they would like to happen during their labour and delivery, i.e. their birth plans. At the end of this section women were asked to give the due date of their baby and the name of their midwife. This information was required in order that clearance could be given to send out the postnatal measures.

2.3.1.10 Section K – Childbirth Self-Efficacy Inventory (CBSEI). The final section of the prenatal measures contained the Childbirth Self-Efficacy Inventory (CBSEI) (Lowe, 1993). This contained four sub-scales: Outcome Expectancy Active Labour; Self-Efficacy Expectancy Active Labour; Outcome Expectancy Second Stage; and Self-Efficacy Expectancy Second Stage. The first two subscales on active labour formed part one of the measure and each contained 15 items, all positively rated on a scale of 1 – 10. The second two sub-scales on second stage formed part two of the measure and each contained 16 items, all positively rated on a scale of 1 – 10. The subscales have good reliability scores of between 0.86 and 0.96 (Lowe, 1993).

2.3.2 Pregnancy measures – post-natal. The post-natal measures (Appendix C) contained eleven sections A – K outlined in table 2.2.

Table 2.2

Measures incorporated in the post-natal questionnaire by section.

Section	Measure
A	Birth experience
B	Usefulness of / adherence to birth plan
C	Birth story
D	Edinburgh Postnatal Depression Scale (EPDS)
E	General health
F	Health knowledge, information provision, locating and questioning health visitor
G	Attitudes towards Doctors and Medicines Scale (ADMS)
H	Multidimensional Health Locus of Control Scale (MHLC) (Form A)
I	Cybernetic Coping Scale (CCS) short (15 item) version
J	Multidimensional Scale of Perceived Social Support (MSPSS)
K	Beliefs about Pain Control Questionnaire (BPCQ)

2.3.2.1 Section A – Birth experience. Section A asked participants to rate their experience of birth on a scale of 1 – 5 where 1 = very negative and 5 = very positive.

2.3.2.2. Section B – Birth plan. Section B contained two questions on the usefulness of and adherence to the birth plan. Each of these questions were scored on a scale of 1 – 4 where 1 = completely useless / ignored and 4 = very useful / adhered to.

2.3.2.3 Section C – Birth story. Section C was an open section in which participants were invited to share their birth story in their own words.

2.3.2.4. Section D – Edinburgh Postnatal Depression Scale. Section D was the Edinburgh Postnatal Depression Scale (EPDS) (Cox et al., 1987). This measure contains 10 items, each rated on a four-point scale. Three items are positively scored and seven items are reverse scored. Scores range from 0 – 30 and scores of 10 or more indicate possible depression. The internal reliability coefficient of the EPDS is α = 0.87 (Cox et al., 1987). Commonly anxiety is measured alongside depression and this practise is advocated as good practice due to the co-morbidity of the two conditions (Zigmond & Snaith, 1983). However, the already large number of variables included in the current study made such an inclusion undesirable. Including a measure of anxiety would have introduced issues of pre-natal anxiety around childbirth, which would then have required measuring both anxiety and depression pre-natally. This would have then given the research a more clinical psychological flavour, which would have moved it away from its intended focus.

2.3.2.5 Section E – General health status. Section E rated general health status in the same manner as in Section B of the pre-natal and comparison measures.

2.3.2.6. Section F – Health knowledge. Section F rated health knowledge, again in the same manner as Section C of the pre-natal and comparison measures, but here an extra three statements were added. These were to assess the level of information provided, participants' ability to locate information and their ability to ask questions of their health visitor. Each of these three statements were rated on five points from strongly disagree to strongly agree.

2.3.2.7 Sections G – K. The remaining five sections G – K were repeated measures in identical format to the comparison sample and the pre-natal measures: Attitudes towards Doctors and Medicines; Multidimensional Health Locus of Control; Cybernetic Coping Scale; Multidimensional Scale of Perceived Social Support; and the Beliefs about Pain Control Questionnaire.

2.3.3 Comparison measures. As in the pre-natal measures, Section A requested general demographic details on age, occupation and ethnic group. Sections B and C related to single questions on general health and health knowledge respectively and adopted a scale of 1 – 10 for each, as in the pre-natal

measures. Sections D – H were in exactly the same format as the pre-natal measures as shown below (See Appendix D for comparison questionnaire).

Table 2.3

Measures incorporated in the comparison questionnaire by section.

Section	Measure
A	Demographic questions: age, occupation and ethnic group
B	General health status
C	Health knowledge
D	Attitudes towards Doctors and Medicines Scale (ADMS)
E	Multidimensional Health Locus of Control scale (MHLC) (Form A)
F	Cybernetic Coping Scale (CCS) short (15 item) version
G	Multidimensional Scale of Perceived Social Support (MSPSS)
H	Beliefs about Pain Control Questionnaire (BPCQ)

2.4 Procedure

2.4.1 Pregnant sample procedure. Consent was obtained from the head of the community midwives in Chester and Ellesmere Port for midwives to distribute packs of measures to pregnant women at their 28 week appointments. The five children's centres that were closest to the University of Chester and had antenatal midwifery services were identified for recruitment purposes. Measures were distributed to the midwives serving each of these children's centres in proportion to the case load of each. Participants were provided with a full account of the purpose of the research; an explanation of how their anonymity and confidentiality would be protected; their withdrawal rights; and the offer of a summary of results on request (see Appendix E). In addition, every participant gave their written informed consent to participate in the study (Appendix F). The consent form asked participants to provide their postal address in order that the post-natal measures could be sent to them directly.

Each pack of measures was coded with a different five digit number derived from an online random number generator (www.random.org). This number appeared on the

measures and the corresponding consent form. When women saw their midwife at one of the selected Children's Centres at or after 28 weeks of pregnancy, they were given a pack of measures in a sealed envelope. The pack contained the participant information sheet, consent form, measures and a freepost return envelope. Each pack envelope and corresponding return envelope was numbered 1 – 250 in order that the Children's Centre it had come from could be identified. Women were free to read the information and decide whether to sign the consent form and complete the measures in their own time. Those who participated returned the completed consent form and measures in the freepost envelope. The Children's Centre, midwife name and due date were noted. A period of six weeks was calculated from each due date before post-natal measures were posted directly to the participants. This was to ensure a minimum of four weeks had passed since delivery, allowing for the fact that some women may have been up to two weeks overdue. The random number allocated to each participant was used in order that names and addresses could be tracked to due dates and measures could be posted to participants at the correct time point.

Midwives were contacted before post-natal measures were sent to each woman to ensure that it was ethically appropriate for the woman to continue with the study and that she had safely delivered a live baby. Post-natal measures were then sent to participants along with a copy of their consent form, signed by themselves and the researcher. These measures were also coded with the randomly generated number pertaining to each participant and were returned by participants directly using a freepost return envelope. This marked the end of their participation in the study. The information sheet kept by the participants contained details of how to contact the researcher for questions or a copy of the summarised findings, as well as support contact details for the National Childbirth Trust.

This process of recruitment continued in waves. Inevitably for each set of T1 data that was collected there was some drop-off at T2. As the target of 120 complete paired samples was approached, this T2 drop-off continued in relative proportions. Therefore an extended period of data collection was required as some of the later collected T1 data was not then matched by the submission of T2 data. This meant that a new phase of T1 data had to be collected, based upon recruitment and

completion percentages, which were are 45% at T1 and 37% at T2. This continued until the target of 120 paired samples of data was achieved.

2.4.2 Comparison sample procedure. Ethical approval for the study was granted by the Department of Psychology at The University of Chester. Recruitment of participants took place through direct approach at the University of Chester main campus. Participation in the study was on a voluntary basis and completion of the measures took each participant approximately 10 – 15 minutes. Participants were asked to read an information sheet (see Appendix G), which they kept for future reference. They were given the opportunity to ask questions then, if they were willing to proceed, were asked to sign a consent form (see Appendix H). Once consent had been obtained, participants were provided with the measures and given the space to complete them in private. Completed measures contained no identifying information and were kept separately from the consent forms in a secure location.

2.5 Analysis

The majority of standardised measures included straightforward scoring procedures in order to arrive at results for each participant. However, other aspects of the design required the development of an analytic technique that was fit for purpose. Firstly, the written birth plans in the pre-natal measures were examined for the total number of decisions in each. These decisions were then classified according to type: pain control (e.g. breathing / relaxation techniques, TENS, entonox, pethidine, obstetric anaesthesia); positions (e.g. standing, laying, squatting, sitting); environment (e.g. home, hospital, music, candles, incense, flowers); support (e.g. partner, friend, doula, mother, sister, midwife); and medical (e.g. oxytocin, syntometrine, membrane sweep, VBAC, continuous electronic foetal monitoring). Full coding details for birth plan analysis are listed in Appendix I.

Likewise, the birth story in the post-natal measures required some interpretation. The analytic technique adopted for the birth plans and birth stories was informed by Bylund's (2005) study of online birth stories. Firstly, the total length of each account was counted in order that an idea of proportion could be achieved. Then each story was coded for positive and negative words and the total of each of these was recorded. Where participants had stated events as occurring but had not attributed any valence to them, these were considered to be neutral and were only counted in

the total word number. The proportion of positive and negative valence in each birth story was adjusted for the overall length of the story by converting the word numbers in each category into percentages of the total word length. Coding details for birth story analysis are given in Appendix J. Examples of positive and negative statements from birth stories are provided in Appendix K.

2.5.1 Research question 1. The first research question asked: What factors influence women's use of birth plans and what types of decisions are made in them? In order to address this question, descriptive statistics were generated for all standardised measures and sample characteristics. The reliability of the standardised measures was tested using Cronbach's alpha and the component structure of each explored for a pregnant sample using principle components analysis. Inter-rater reliability of the birth plan coding was tested using Cohen's kappa. Differences between birth planners and non-birth planners were analysed on all standardised measures as well as single item measures and sample characteristics using t-tests, one-way ANOVA's and chi-squared tests. The number of decisions and the types of decisions in the birth plans were analysed in terms of each variable using correlations, t-tests and one-way ANOVA's as appropriate.

2.5.2 Research question 2. The second research question asked: What are the post-natal psychological outcomes for women based upon social, health and psychological factors, and the existence, nature, complexity and evaluation of birth plans? In order to address this question, descriptive statistics were generated for single item measures and standardised measures. The reliability of the standardised measures was tested using Cronbach's alpha. Inter-rater reliability of the birth story coding was tested using Cohen's kappa. Outcomes were measured in terms of: EPDS scores; the percentage of positive and negative statements in the birth stories; birth experience ratings and the differences between these ratings and birth expectancies ratings. These outcome measures were analysed in terms of the sample characteristics, single item measures and standardised measures using correlations, t-tests and one-way ANOVA's as appropriate. Following this, some variables were entered into a multiple regression on each outcome measure.

2.5.3 Research question 3. The third research question asked: Do women score differently on the scales between pregnancy and the post-natal period and

how does this compare with scores from non-pregnant women on the same scales? In order to address this research question, descriptive statistics were compared between the two groups and the two time-points for sample characteristics and standardised measures. This data was then analysed using chi squared tests and independent or related t-tests as appropriate.

Chapter 3 – Descriptive statistics from the pregnant sample at pre-natal (T1) testing

This chapter explores the data from the pregnant women at the pre-natal testing point (T1). Patterns of distribution are examined across all interval scales, and the reliability of the data are tested on items and subscales from: the Attitudes towards Doctors and Medicines Scale (ADMS) (Marteau, 1990); the Multidimensional Health Locus of Control Scale (MHLC) (Form A) (Wallston et al., 1978); the Cybernetic Coping Scale (15-item version) (CCS) (Guppy et al., 2004); the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988); the Beliefs about Pain Control Questionnaire (BPCQ) (Skevington, 1990); and the Childbirth Self-Efficacy Inventory (CBSEI) (Lowe, 1991). Principal components analysis using varimax rotation was also performed on all of the above scales in order to explore the component structure of each measure when tested on a pregnant sample. Section 3.7 then looks at the sample characteristics. Finally section 3.8 examines inter-rater reliability of the birth plan coding. Values throughout the analyses have been rounded up to two decimal places.

Section 3.1 – The Attitudes towards Doctors and Medicines Scale (ADMS)

The ADMS comprised two subscales, Positive Attitudes towards Doctors (PAD) and Positive Attitudes towards Medicines (PAM). The PAD subscale produced a mean of 13.40 (3.88). This is comparable with Marteau's (1990) reported means of 12.30 (3.80) from a sample of 148 women at an antenatal clinic. Skewness (.19) and kurtosis (-.82) values indicated a relatively normal distribution and box plot analysis did not identify any extreme scores. A Cronbach's alpha produced a reliability value of .80, slightly higher than Marteau's (1990) .76 for the same subscale.

The PAM subscale produced a mean of 15.48 (0.20), two higher than the PAD. This is reflected in Marteau's (1990) mean for the PAM of 14.30 (3.50) – again, two higher than that of the PAD subscale in that study. Skewness (-.51) and kurtosis (.46) values reflected a moderately normal distribution. However, examination of a box plot identified extreme scores at the lower end of the scale, up to six units away from the lower bound of the box plot. Furthermore, Cronbach's Alpha produced a poor reliability value of .29 for the PAM subscale, which could only be raised to a maximum of .36 if question 4 was deleted.

The component structure of the ADMS was examined using Kaiser normalisation and varimax rotation in five iterations. This revealed three Eigenvalues above one, though these only represented 71.13% of the total variance, rather than the recommended 75% (Dancey & Reidy, 2004). The loadings of each item are shown in table 3.1 (omitting factor loadings below +/- .40).

Table 3.1

Item loadings (and Eigenvalues/ % of variance) for each component of the ADMS.

Item	Component (Eigenvalue/ % of variance)		
	1 (2.37/ 30%)	2 (1.88/ 23.50%)	3 (1.45/ 18.11%)
3 – I have absolute faith and confidence in all hospital doctors	.86		
1 – All doctors are good doctors	.85		
5 – No matter how long you have to wait to see a doctor, it's worth it	.70		.43
6 – Medicine has cures for most diseases		.84	
8 – Medicine is the best profession a person can have		.76	
7 – Doctors know what's best for you		.67	
4 – The improved health of the nation is due to effective medicine			.81
2 – Medicine is based upon scientific principles			.64

Table 3.1 shows component one comprised items 1, 3 and 5 of the ADMS. These items, together with question 7 (in component 2 in the current analysis) formed the PAD subscale. As component 1 appeared to be fairly robust, scored an acceptable reliability value and was reasonably normally distributed, it was decided to retain this

variable for further analyses. The items from the PAM subscale were divided across components 2 and 3. Questions 2 and 4 were located in component 3 and questions 6 and 8 in component 2. Marteau (1990) reported using principal components analysis with varimax rotation in the development of the ADMS on a pregnant sample. As Marteau's (1990) methods in examining the structure of the ADMS appear to have been comparable to the methods adopted in the current study, a scree plot was produced to examine the differing structure identified here further.

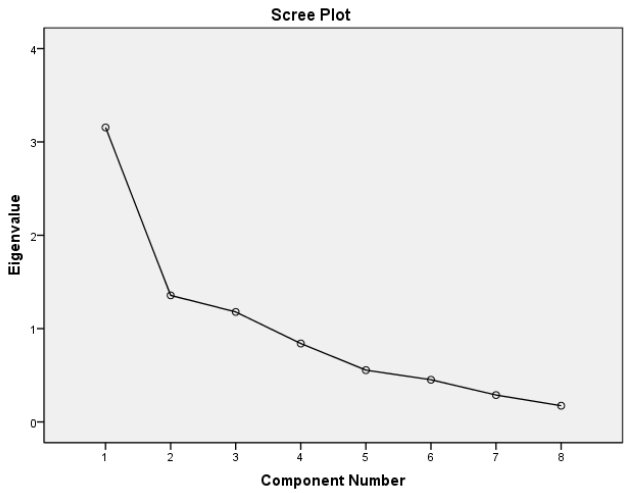

Figure 3.1. Scree plot showing Eigenvalues for each component of the ADMS.

The scree plot shown in figure 3.1 shows a plateau effect after component 2, creating a clear point of inflection. This suggests a two component structure, more in line with Marteau's (1990) findings. However, the findings from the principle components analysis, when put together with the fact that extreme scores were identified on this subscale and that it produced such weak reliability values, led to the decision to omit the PAM subscale from any further analyses at this stage.

Section 3.2 – The Multidimensional Health Locus of Control Scale (MHLC)

Two sub-scales from the MHLC scale were included in these measures: the Internal Health Locus of Control (IHLC) and the Powerful others Health Locus of Control (PHLC). The IHLC subscale produced a mean of 23.69 (2.96), slightly lower than Wallston et al.'s (1978) original mean of 25.10 (4.89). Wallston et al.'s (1978) sample was from a general population in the departures lounge of a US airport. Given that pregnant women in the current sample were reporting generally lower levels of internal health control indicated a potentially interesting phenomenon, which would

be compared with the non-pregnant sample further on in analysis. Skewness (-.40) and kurtosis (-.43) values indicated little concern over distribution and box plot examination identified no extreme scores. Cronbach's alpha produced an overall reliability value of .56, which could be raised to .65 if item 6 (when I get sick, I am to blame) was omitted. Deletion of item 6 would still leave five remaining items in the sub-scale. Wallston et al.'s (1978) original alpha coefficient for the IHLC sub-scale was 0.77.

The PHLC subscale produced a mean of 15.79 (.43), again lower than the 19.99 (5.22) reported by Wallston et al. (1978). Skewness (.36) did not appear to be a problem but a kurtosis score of -1.17 reflected a somewhat lepokurtic distribution. A box plot for this data identified no extreme scores and Cronbach's alpha produced a reliability coefficient of .78, stronger than Wallston et al.'s .67.

Examination of the component structure of the MHLC scale with Kaiser normalisation and varimax rotation in six iterations identified three factors with Eigenvalues above one, representing 63.88% of the total variance. The loadings of each item of +/- .40 and above onto the three components are given in table 3.2.

Two of the three original subscales from the MHLC scale were used in the current study, so the identification of a third component in the data was problematic. Component one accounted for 25.52% of the total variance and appeared to represent the PHLC subscale. The PHLC subscale comprised items 2,3,5,7,10 and 12 in Wallston et al.'s (1978) original scale development, of which items 5 and 7 were not represented in component 1 of the current data but item 8, from Wallston et al.'s (1978) IHLS subscale, was. Component two accounted for 22.02% of the variance and appeared to represent Wallston et al.'s (1978) IHLC subscale. This sub-scale comprised items 1,4,6,8,9 and 11 in the original scale development, of which items 4 and 6 were not represented in component 2 here but item 5, from the PHLC subscale, was. Notably, it was item 6 that was identified as the weakest item in the reliability analysis. Items 4, 6 and 7 formed the third component, accounting for 16.34% of the variance. A scree plot was produced to further identify how the components were structured.

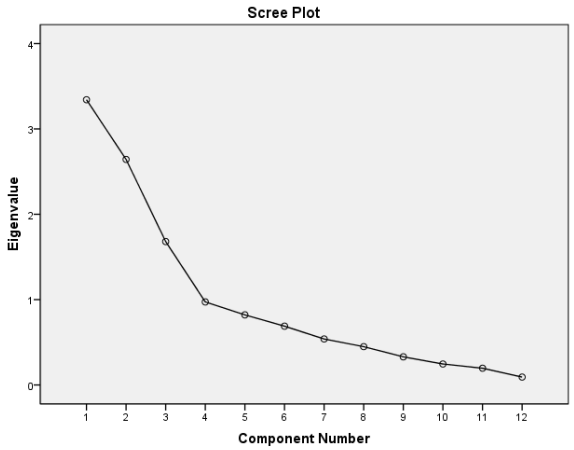

Figure 3.2. Scree plot showing Eigenvalues for each component of the MHLC (Form A) scale.

The scree plot shown in figure 3.2 shows the drop off after the point of inflection at component 4. However, component 4 had an Eigenvalue below 1 so the same three components remain. Wallston et al. (1978) do not give any information on factor analysis of the MHLC but the factor structure has been examined using a variety of tests and settings since its development (Bonetti et al., 2001; Chaplin et al., 2001; Armitage, 2003; Hubley & Wagner, 2004). Factors identified may differ according to the technique adopted, the nature of the sample and the age group in which the test was administered.

Table 3.2

Item loadings (and Eigenvalues/ % of variance) for each component of the MHLC (Form A) scale.

Item	Component (Eigenvalue/ % of variance)		
	1 (3.06/ 25.52%)	2 (2.64/ 22.02%)	3 (1.96/ 16.34%)
12 – Regarding my health, I can only do what my doctor tells me to do.	.85		
3 – Whenever I don't feel well I should consult a medically trained professional.	.82		
2 – Having regular contact with my doctor is the best way for me to avoid illness.	.79		
8 – The main thing which affects my health is what I myself do.	-.65	.43	
10 – When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	.50		
9 – If I take good care of myself I can avoid illness.		.79	
11– If I take the right actions I can stay healthy.		.78	
5 – My family has a lot to do with my becoming sick or staying healthy.		.74	
1 – If I get sick, it is my own behaviour which determines how soon I get well again.		.66	
4 – I am in control of my health.			-.74
7 – Health professionals control my health.			.71
6 – When I get sick, I am to blame.			.58

Health Locus of Control has been identified as a central issue to the current study in Chapter 1. Therefore item 6 was deleted in order to improve the reliability of the IHLC subscale. The respective issues with each sub-scale are acknowledged but both were retained due to their considered importance to the study. However, caution was exercised in the interpretation of any significant results from this scale due to its non-normal distribution.

Section 3.3 – Cybernetic Coping Scale short (15 item) version

The 15 item version of the Cybernetic Coping Scale (Guppy et al., 2004) comprised five subscales: Change the Situation; Accommodation; Devaluation; Avoidance; and Symptom Reduction. This version was originally tested on four different samples: undergraduate students; serving police officers; police service recruits; and social services employees. The Change the Situation subscale produced a mean of 10.28 (2.22), higher than the mean of 8.75 (2.20) from four studies reported by Guppy et al. (2004). Skewness (.20) and kurtosis (-.21) values indicated relatively normal distribution patterns. Examination of a box plot identified no extreme scores within the data. Cronbach's alpha produced a reliability of .92, markedly higher than the .77 from Guppy et al.'s (2004) studies.

The Accommodation subscale produced a mean of 9.18 (1.65), higher than the mean of 8.00 (1.93) from Guppy et al.'s (2004) studies. The skewness score was -.01 and the kurtosis score was -0.80, indicating a mildly lepokurtic distribution. Box plot examination identified no extreme scores. Cronbach's alpha produced a reliability of .70 for the Accommodation sub-scale, close to the .69 reported by Guppy et al. (2004).

The Devaluation subscale produced a mean of 8.80 (1.70), higher than the 7.20 (2.30) reported in Guppy et al.'s studies. The skewness (.49) and kurtosis (-.32) values did not indicate any problems and examination of a box plot of the data confirmed no extreme scores. Cronbach's alpha produced a reliability of .78, slightly short of Guppy et al.'s (2004) .81 but still within reliable parameters.

The Avoidance subscale produced a mean of 8.50 (1.74), higher than the 6.80 (2.20) reported by Guppy et al. (2004). The skewness value (.12) was of little concern,

though the kurtosis value of -.76 indicated a mildly lepokurtic distribution. A box plot showed no extreme scores in the data and Cronbach's alpha yielded reliability of .86, higher than Guppy et al.'s (2004) .74.

The symptom reduction subscale produced a mean of 10.03 (1.85), again higher that Guppy et al.'s 9.20 (2.19). The skewness value of .57 was far enough away from 1 to be acceptable but the kurtosis value of .94 indicated a somewhat platykurtic distribution.

In addition, examination of a box plot identified some extreme scores at the top end of the scale, beyond the upper bound of the plot. Cronbach's alpha produced a reliability of .59 (against Guppy et al.'s, 2004, .69), which could be improved by the deletion of item 15 to .69, bringing it to an equivalent level of reliability as the original. However, removal of one item from this subscale would reduce it to two items.

Examination of the component structure of the CCS (15 items) using Kaiser normalisation and varimax rotation in six iterations identified five components with Eigenvalues above .90. Together these accounted for 79.94% of the variance. Eigenvalues of .90 were examined in this case as the fifth component had an Eigenvalue of .98, which was close to the conventional 1 and much higher than the remaining components. Without component 5 only 72.16% of the variance was accounted for, below the recommended 75% (Dancey & Reidy, 2004). Table 3.3 gives a summary of the item loadings of +/- .40 and above for each component.

Component one appeared to represent two of the subscales from the CCS short (15 item) version: Devaluation and Avoidance, as it contained every item from these subscales as identified in Guppy et al.'s (2004) confirmatory factor analysis. Component two in the current analysis contained all items from Guppy et al.'s (2004) Change the Situation subscale and two of the three items from their Accommodation subscale, though to a weaker extent. However, one of these Accommodation items was also represented more strongly in component three, along with Guppy et al.'s (2004) third Accommodation item. Two items from Symptom Reduction formed component four in the current analysis, whilst the third item from Guppy et al.'s (2004) Symptom Reduction formed its own fifth component here.

As the five components identified did not reflect those identified by Guppy et al. (2004), a scree plot was created to try to establish whether five components was the optimum number in the current analysis.

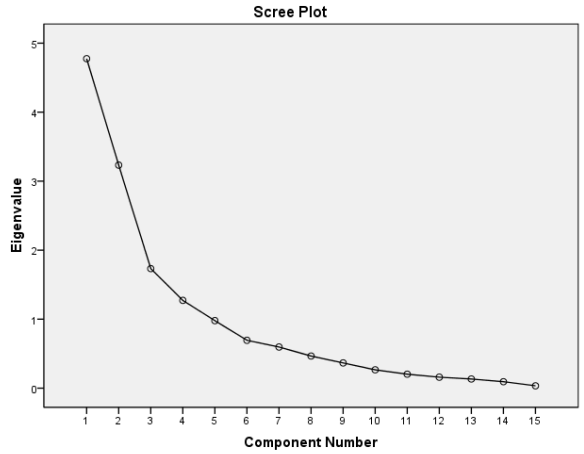

Figure 3.3. Scree plot showing Eigenvalues for each component of the CCS short (15 item) version

Figure 3.3 displays two points of inflection, one at component three and the other at component 6. However, component 6 had an Eigenvalue of only .69 and therefore was not strong enough to represent a component. This left five components, though the fifth of these contained just one item. This single item (item 15) was the weakest item in the reliability analysis. The three items in Guppy et al.'s (2004) Symptom Reduction subscale were: 'I try to let off steam' (item 5); 'I try to relieve my tension somehow' (item 10); and 'I try to get it off my chest' (item 15). Differences identified on this sub-scale between the current sample and those used in Guppy et al. (2004) are possibly attributable in part to the exclusively female sample in the current study. However, consideration of the problems with distribution, reliability and internal consistency in the Symptom Reduction subscale led to the decision to delete this sub-scale from the current stage of analysis. As the remaining two items from Guppy et al.'s (2004) Symptom Reduction subscale formed component four in the current analysis, omission of the Symptom Reduction subscale neatly left the three strongest components: Devaluation and Avoidance; Change the Situation and Accommodation; and Accommodation. These are illustrated by Cattell's point of inflection on the scree plot in figure 3.3. It is duly acknowledged, however, that these three components only accounted for 60.02% of the variance.

Table 3.3

Item loadings (and Eigenvalues/ % of variance) for each component of the CCS short (15 item) version.

Item	Component (Eigenvalue/% of variance)				
	1 (3.83/ 25.54%)	2 (3.31/ 22.09%)	3 (1.86/ 12.39%)	4 (1.82/ 12.14%)	5 (1.17/ 7.78%)
13 – I tell myself that the problem wasn't such a big deal after all.	.84				
9 – I try to avoid thinking about the problem.	.82				
14 – I try to turn my attention away from the problem.	.78				
3 – I tell myself the problem was unimportant.	.75				
4 – I try to keep myself from thinking about the problem.	.74				
8 – I tell myself the problem wasn't so serious after all.	.70				
6 – I focus my efforts on changing the situation.		.91			
1 – I try to change the situation to get what I want.		.87			
11 – I work on changing the situation to get what I want.		.85			
7 – I try to adjust my expectations to meet the situation.		.62			
12 – I try to adjust my own standards.			.90		
2 – I make an effort to change my expectations.		.48	.73		
10 – I try to relieve my tension somehow.				.84	
5 – I try to let off steam.				.83	
15 – I try to get it off my chest.					.81

Section 3.4 – Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS contained three subscales: Significant Other; Family; and Friends. The Significant Other subscale produced a mean of 25.93 (3.03), with an item mean of 6.48. This is slightly higher than Zimet et al.'s (1988) item mean of 5.74 (1.25). However, Zimet et al. (1988) tested the MSPSS on undergraduate students between the ages of 17 and 22 years. At this age, significant others are unlikely to be as important in perceived social support as for the pregnant women in this study, who are perhaps more likely to look to their partner for support during their pregnancy. The data was negatively skewed on this subscale (-1.09), reflecting the importance of the significant other to women during pregnancy, though the kurtosis value was acceptable (-.29).

Originally, the MSPSS was designed with a five-point rating scale. However, after a series of pilot studies, Zimet et al. (1988) increased this to a seven-point rating scale in an attempt to minimize ceiling effects. Whilst this may have been achieved in general populations, the significance of the partner during pregnancy is clearly illustrated in the current responses. Box plot analysis identified no extreme scores and a Cronbach's alpha gave a reliability value of .94, compared with Zimet et al.'s (1988) .91.

The Family subscale of the MSPSS produced a mean of 24.91 (3.26). The item mean of 6.23 was slightly higher than Zimet et al.'s (1988) item mean of 5.80 (1.12) for this subscale. Again, this may reflect the importance of family during pregnancy, particularly with the mother but also other female relatives such as sisters. This was further evident in the negative skewness of the data (-1.04), though the kurtosis value was acceptable (.04).

Responses on the Family subscale show a less marked but still substantial negative skew reflecting the value pregnant women place on support from family. Box plot examination revealed no extreme scores in this data and Cronbach's alpha gave a reliability value of .94, compared with Zimet et al.'s (1988) .87.

The Friends subscale of the MSPSS produced a mean of 22.64 (3.93), with an item mean of 5.66, very slightly lower than Zimet et al.'s 5.85 (.94). Skewness (-.49) and kurtosis (.26) values were acceptable, though box plot analysis interestingly

identified some extreme scores at the lower end of the scale. These were up to four units below the next lowest score but formed an appropriately representative tail end to the normal distribution pattern. There did not appear to be anything else extreme about these participants than their scores on the Friends sub-scale. Cronbach's alpha produced a reliability value of .95, compared with Zimet et al.'s (1988) .85. Therefore, with apparently sound data in other respects, the extreme scores were moved up to 15, one away from the next lowest data point as described by Tabachnick and Fiddell (2004).

Exploration of the component structure of the MSPSS using Kaiser normalisation and varimax rotation in five iterations revealed three components with an Eigenvalue of 1 or over. These three components together explained 87.91% of the variance. Item loadings of +/- .40 and above on each component are presented in table 3.4.

Table 3.4

Item loadings (and Eigenvalues/ % of variance) for each component of the MSPSS.

Item	Component (Eigenvalue/ % of variance)		
	1 (3.67/30.58%)	2 (3.51/29.23%)	3 (3.37/28.10%)
9 – I have friends with whom I can share my joys and sorrows.	.92		
12 – I can talk about my problems with my friends.	.89		
6 – My friends really try to help me.	.87		
7 – I can count on my friends when things go wrong.	.85		
2 – There is a special person with whom I can share my joys and sorrows.		.91	
5 – I have a special person who is a real source of comfort to me.		.88	
1 – There is a special person who is around when I am in need.		.84	
10 – There is a special person in my life who cares about my feelings.		.82	
4 – I get the emotional help and support I need from my family.			.90
3 – My family really tries to help me.			.88
8 – I can talk about my problems with my family.			.86
11 – My family is willing to help me make decisions.			.76

The four items in each of the three components relate to the items that form the three subscales of the MSPSS (Zimet et al., 1988). Thus component one appears to represent the Friends subscale, component two the Significant Other subscale and component three the Family subscale. The rotated sums of squared loadings showed similar Eigenvalues and percentages of variance across the three components. However, initial Eigenvalues showed markedly higher results for component one, as illustrated in the scree plot in figure 3.4.

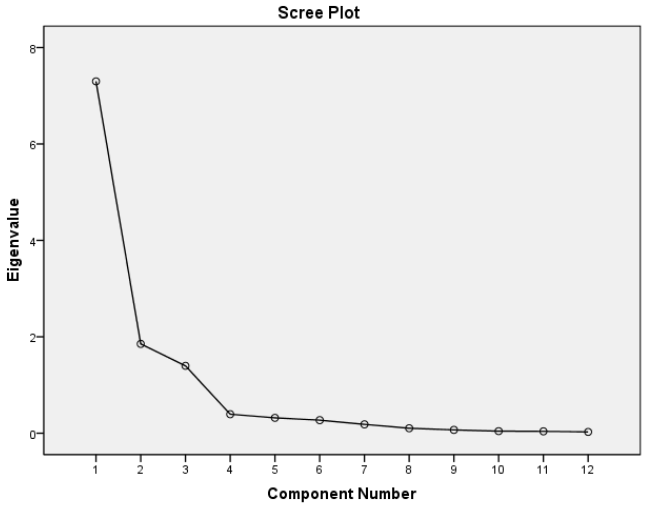

Figure 3.4. Scree plot showing Eigenvalues for each component of the MSPSS.

Figure 3.4 reveals the strong factor structure for component one, with a plateau effect after component three. The current study used the same form of factor analysis as Zimet et al. (1988) (principle components analysis with Kaiser normalisation). However, a different sample (pregnant women rather than undergraduate students) and rotation (orthogonal rather than oblique) were adopted in the current study. These findings therefore suggest a robust component structure of the MSPSS.

Section 3.5 – Beliefs about Pain Control Questionnaire (BPCQ)

The BPCQ contained two subscales: Internal pain and Powerful Doctors pain. The Internal pain subscale produced a mean of 15.03 (3.70). Skevington (1990) presented a total sample mean score of 15.57 (4.86) on the Internal pain subscale. However it should be noted that Skevington's (1990) sample comprised groups of chronic pain patients, breast and ovarian cancer patients, acupuncture patients, undergraduates and university applicants. Of these groups, undergraduates and

university applicants are the two most comparable to the current sample as they are the only generally healthy groups. Their means were 15.29 (3.89) and 15.64 (3.82) respectively, falling close to, if slightly higher than the mean obtained for the Internal pain subscale in the current sample. Skewness (.07) and kurtosis (-.71) scores fell within acceptable limits and no outliers were identified. Cronbach's alpha revealed a reliability value of .85, an improvement on the .73 achieved in Skevington's (1990) total sample.

The Powerful Doctors pain subscale produced a mean of 12.05 (3.55). Skevington's (1990) total sample showed a mean of 13 (4.79) on the Powerful Doctors subscale, with undergraduates and university applicants scoring 11.24 (3.00) and 10.76 (3.29) respectively. The relatively high skewness (.85) and kurtosis (.97) values reflect the generally positively skewed data, with relatively low scores on the subscale, yet a lepokurtic peak in the scores. Box plot analysis identified no extreme scores on the Powerful Doctors subscale. Cronbach's alpha showed a reliability value of .85 compared with Skevington's (1990) total sample reliability of .82.

Exploration of the component structure of the BPCQ using Kaiser normalisation and varimax rotation in five iterations revealed three components with an Eigenvalue of 1 or over. These components explained 77.33% of the variance and the item loadings of +/- .40 and above on each component are shown in table 3.5.

Table 3.5

Item loadings (and Eigenvalues/ % of variance) for each component of the BPCQ.

Item	Component (Eigenvalue/ % of variance)		
	1 (2.84/ 31.54%)	2 (2.45/ 27.27%)	3 (1.67/ 18.53%)
7 – People's pain results from their own carelessness.	.89		
8 – I am directly responsible for my pain.	.85		
6 – When I am in pain I know that it is because I have not been taking proper exercise or eating the right food.	.82		
3 – Whenever I am in pain, it is usually because of something I have done or not done.	.71		
9 – Relief from pain is chiefly controlled by the doctors.		.90	
5 – I cannot get any help for my pain unless I go to seek medical help.		.85	
4 – Whether or not I am in pain depends on what the doctors do for me.		.65	.61
1 – If I take good care of myself I can usually avoid pain.			.90
2 – Whether or not I am pain in the future depends on the skill of the doctors.		.62	.67

Table 3.5 reveals a strong component structure for components one and two, with a weaker structure for a third component, as illustrated in the scree plot in figure 3.5.

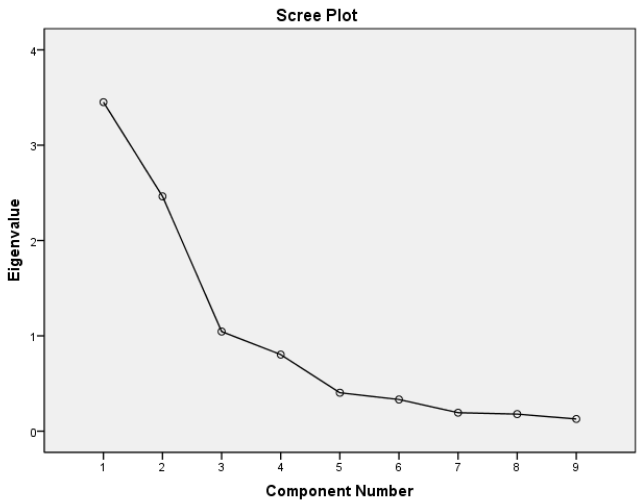

Figure 3.5. Scree plot showing Eigenvalues for each component of the BPCQ.

The scree plot for the BPCQ shows Cattell's point of inflection at component three, providing further evidence for an additional component in the items from Skevington's (1990) original two components. Component one corresponded largely with the items from Skevington's (1990) Internal pain subscale. Component two corresponded exactly with Skevington's (1990) Powerful Doctors pain subscale, though together components one and two only accounted for 58.81% of the variance. The third component identified was comprised of three items: item 1, which was omitted from the first component where it was expected to appear, plus items 2 and 4. These two items were repeated from component 2, representing the Powerful Doctors pain subscale. Independently, component three in the current analysis accounted for a markedly lower proportion of the variance, compared to the more robust components 1 and 2. Skevington (1990), using the same analysis, rotation and normalisation, found Powerful Doctors pain to be the strongest subscale accounting for 23% of the variance and Internal pain to be the second strongest factor (17.10%). As both of these values are lower than the proportions of variance accounted for by the same two components in the current data, the identification of a third weak component was deemed not to detract from the general construct validity of the measure.

Section 3.6 – Childbirth Self-Efficacy Inventory (CBSEI)

The CBSEI (Lowe, 1993) contained four initial subscales: Outcome Active Labour (Outcome-AL); Efficacy Active Labour (Efficacy-AL); Outcome Second Stage (Outcome-SS); and Efficacy Second Stage (Efficacy-SS). The active labour and second stage scores were summed for both variables to give overall Outcome and Efficacy scales. The Outcome-AL subscale produced a mean of 124.90 (17.20), slightly lower than Lowe's (1993) Outcome-AL mean of 128.30 (14.50) from a total sample consisting of both primiparous and multiparous women. The distribution of scores showed a moderate negative skew of -.48 and a rather lepokurtic value of -.94. Box plot analysis identified no extreme scores on the Outcome-AL subscale. Cronbach's alpha showed very strong reliability for Outcome-AL - .93, slightly higher than Lowe's (1993) .86.

The Efficacy-AL subscale produced a mean of 93.93 (19.13), ten below Lowe's (1993) mean for the same subscale of 103.10 (21.60). Scores on Efficacy-AL were

largely normally distributed, with a reasonably mesokurtic value of -.23 and little skewness (.15). Box plot analysis identified an outlier at the upper end of the scale, which was moved to one higher than the next highest score in accordance with the treatment of other similar cases. Cronbach's alpha gave a reliability value of .91, close to Lowe's (1993) .93 for the Efficacy-AL subscale.

The Outcome-SS subscale produced a mean of 120.30 (21.21), again lower than Lowe's (1993) 129.60 (20.60). The distribution had a slight negative skew (-.32) but was lepokurtic (-1.06), peaking between 140 and 145. Box plot analysis identified no outliers and Cronbach's alpha gave a reliability value of .92, similar to Lowe's (1993) .90.

The Efficacy-SS subscale produced a mean of 94.42 (21.16), also lower than Lowe's (1993) 106.60 (26.80). Cultural differences in the samples may account for Lowe's higher means on all four subscales as the measure was developed on a US sample, whereas the current data is from UK women. Data was quite normally distributed with very little skewness (.04) and a kurtosis value of -.18. Box plot analysis showed no extreme scores and Cronbach's alpha produced a healthy reliability value of .91, comparable to that of Lowe (1993) (.95).

Outcome-AL and Outcome-SS were combined to create an Outcome-Total subscale. Efficacy-AL and Efficacy-SS were also combined to create an Efficacy-Total subscale. The Outcome-Total subscale showed a mean of 243.09 (36.05), inevitably lower than Lowe's (1993) 257.0 (32.20), given the means of the component subscales. The distribution was only slightly negatively skewed (-.27) but was rather lepokurtic at -.90. Box plot analysis identified no extreme scores on the Outcome-Total subscale.

The Efficacy-Total subscale produced a mean of 188.36 (40.66), again inevitably lower than Lowe's (1993) 209.70 (46.10). Distribution of scores was moderately negatively skewed (-.69) but was platykurtic (1.54). Box plot analysis identified no extreme scores on the Efficacy-Total subscale.

The component structure of the CBSEI was explored using four separate analyses. This was required because, as Lowe (1993) points out, the repetitious nature of the

items in each of the four subscales may result in systematic error. Therefore a principle components analysis was carried out on each subscale.

The Outcome-AL subscale was analysed using Kaiser normalisation and varimax rotation in 5 iterations and revealed 3 components with an Eigenvalue of one or over, accounting for 71.74% of the variance. The item loadings of +/- .40 and above for each component are presented in table 3.6.

Table 3.6

Item loadings (and Eigenvalues/ % of variance) for each component of the Outcome-AL subscale of the CBSEI.

Item	Component (Eigenvalue/ % of variance)		
	1 (4.43/29.51%)	2 (3.84/25.62%)	3(2.49/16.61%)
10 – Think positively.	.84		
15 – Listen to encouragement from the person helping me.	.79		
14 – Concentrate on getting through one contraction at a time.	.78		
12 – Tell myself that I can do it.	.72		
8 – Concentrate on thinking about the baby.	.68	.44	
2 – Get ready for each contraction.	.67	.59	
13 – Think about others in my family.	.47		
1 – Relax my body.		.88	
5 – Think about relaxing.		.87	
3 – Use breathing during labour contractions.		.76	
11 – Not think about the pain.			.71
4 – Keep myself in control.		.61	.66
9 – Stay on top of each contraction.	.49	.42	.63
7 – Keep myself calm.		.51	.57
6 – Concentrate on an object in the room to distract myself.	.49		.51

Table 3.6 suggests that the items from the Outcome-AL subscale are spread across three components. Examination of a scree plot was required in order to further investigate these components.

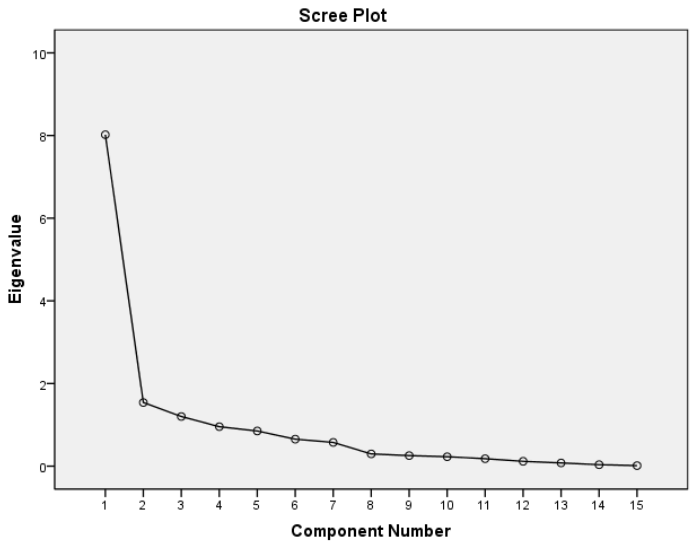

Figure 3.6. Scree plot showing Eigenvalues for each component of the Outcome-AL subscale of the CBSEI

Figure 3.6 clearly shows Cattell's point of inflection at component two, after which a plateau effect occurs. This suggests a two-component structure to items 1 – 15 of the CBSEI. However, Lowe (1993) analysed the factor structure of the CBSEI with principle axes factor analysis using both orthogonal and oblique rotation. Therefore the differences in analytic technique may contribute to differing structure patterns identified in the original and current analyses.

The Efficacy-AL subscale of the CBSEI was analysed using principle components analysis with Kaiser normalisation and varimax rotation in ten iterations. Four components were identified with an Eigenvalue above 1, explaining 77.41% of the variance. The item loadings of +/- .40 and above for these components are shown in table 3.7.

Table 3.7

Item loadings (and Eigenvalues/ % of variance) for each component of the Efficacy-AL subscale of the CBSEI.

Item	Component (Eigenvalue/ % of variance)			
	1 (3.56/23.71%)	2(3.22/21.47%)	3(2.65/17.70%)	4(2.18/14.54%)
27 – Tell myself that I can do it.	.86			
25 – Think positively.	.82			
28 – Think about others in my family.	.77			
21 – Concentrate on an object in the room to distract myself.	.54		.42	
24 – Stay on top of each contraction.		.86		
20 – Think about relaxing.		.75		
19 – Keep myself in control.	.50	.75		
22 – Keep myself calm.	.58	.67		
17 – Get ready for each contraction.			.82	
23 – Concentrate on thinking about the baby.			.76	
30 – Listen to encouragement from the person helping me.			.64	.45
16 – Relax my body.			.64	
18 – Use breathing during labour contractions.		.51		.72
26 – Not think about the pain.				.70
29 – Concentrate on getting through one contraction at a time.	.57			.60

The item loadings in table 3.7 suggest some dispersion across the four components. However, the scree plot in Figure 3.7 makes a clearer representation of the structure pattern.

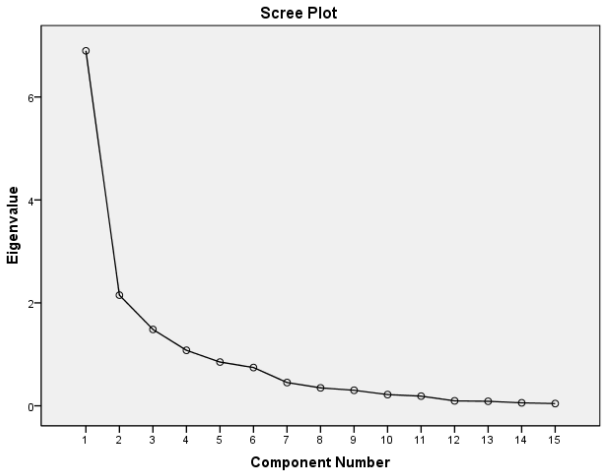

Figure 3.7. Scree plot showing Eigenvalues for each component of the Efficacy-AL subscale of the CBSEI.

Figure 3.7 shows Cattell's point of inflection at component two, after which a plateau effect occurs. This suggests a two component structure to the Efficacy-AL subscale. However, these two components only account for 45.17% of the variance, whereas Lowe (1993) reports 49.50% of the variance as explained by one single factor of Efficacy-AL. Again though, this may be due to alternative analytic techniques.

The Outcome-SS subscale of the CBSEI was analysed using principle components analysis with Kaiser normalisation and varimax rotation in 17 iterations. Four components were identified with an Eigenvalue above 1, explaining 76.43% of the variance. The item loadings of +/- .40 and above for these components are shown in table 3.8.

Table 3.8

Item loadings (and Eigenvalues/ % of variance) for each component of the Outcome-SS subscale of the CBSEI.

Item	Component (Eigenvalue/ % of variance)			
	1(5.62/35.13%)	2(2.27/14.19%)	3(2.25/14.08%)	4(2.09/ 13.03%)
37 – Keep myself calm.	.85			
34 – Keep myself in control.	.84			
35 – Think about relaxing.	.84			
40 – Think positively.	.78			
38 – Concentrate on thinking about the baby.	.74			
31 – Relax my body.	.71			
33 – Use breathing during labour contractions.	.70		.52	
32 – Get ready for each contraction.	.66		.50	
39 – Stay on top of each contraction.	.65		.56	
41 – Not think about the pain.		.76		
36 – Concentrate on an object in the room to distract myself.		.69		
43 – Think about others in my family.		.62		
44 – Concentrate on getting through one contraction at a time.			.79	
42 – Tell myself that I can do it.		.45	.70	
45 – Focus on the person helping me in labour.				.89
46 – Listen to encouragement from the person helping me.	.58			.73

The item loadings in table 3.8 show one strong component and three less substantial components of similar proportions. A scree plot was produced to represent the Eigenvalues graphically in order that the appropriate number of components to retain might become clearer.

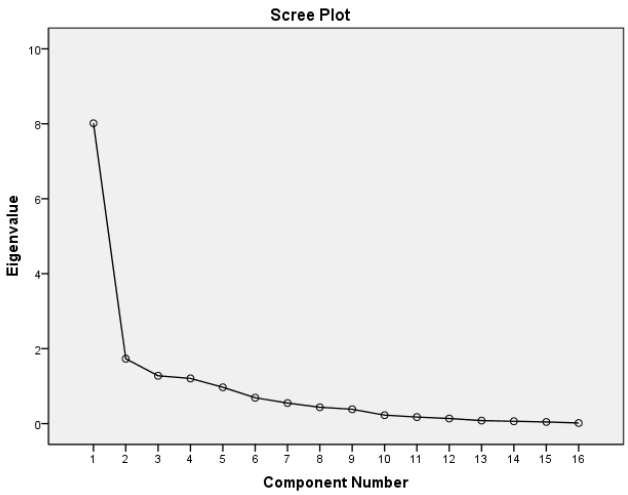

Figure 3.8. Scree plot showing Eigenvalues for each component of the Outcome-SS subscale of the CBSEI.

The scree plot in Figure 3.8 shows Cattell's point of inflection at component two, suggesting that it is appropriate to retain two components here. However, the Eigenvalue and proportion of variance explained by component 2 was similar to those of components 3 and 4. Added to this the total variance explained by both components 1 and 2 did not reach the recommended 75% anyway (49.32%). Therefore there did not appear to be much gained by retaining component 2 and a single component structure was confirmed.

The Efficacy-SS sub-scale of the CBSEI was analysed using principle components analysis with Kaiser normalisation and varimax rotation in 10 iterations. Four components were identified with an Eigenvalue above 1, explaining 79.12% of the variance. The item loadings of +/- .40 and above for these components are shown in table 3.9.

Table 3.9 shows some duplication of item loadings across the components. Component one has four items loaded solely onto it (items 55, 48, 49 and 57). Three further items are loaded onto both components one and two (items 53, 47 and 51)

but the loadings for component one are higher for these three items. A further item loaded onto both components one and two was higher for component two (item 50).

Three items loaded onto component two alone (items 56, 54 and 58) and one item (item 50) loaded onto component two more highly than component one. Two further items (62 and 59) loaded onto component two but to a lesser extent than they did components three and four respectively.

Component three comprised only three items, with only two of these loading exclusively onto it (items 60 and 61). Similarly, component four comprised only two items, with only one loading exclusively onto it (item 52).

Table 3.9

Item loadings (and Eigenvalues/ % of variance) for each component of the Efficacy-SS subscale of the CBSEI.

Item	Component (Eigenvalue/ % of variance)			
	1 (4.74/29.63%)	2 (3.62/22.59%)	3 (2.54/15.90%)	4 (1.76/11.0%)
55 – Stay on top of each contraction.	.87			
48 – Get ready for each contraction.	.86			
49 – Use breathing during labour contractions.	.80			
57 – Not think about the pain.	.76			
53 – Keep myself calm.	.69	.55		
47 – Relax my body.	.67	.42		
51 – Think about relaxing.	.61	.55		
56 – Think positively.		.80		
54 – Concentrate on thinking about the baby.		.76		
50 – Keep myself in control.	.54	.71		
58 – Tell myself that I can do it.		.66		
61 – Focus on the person helping me in labour.			.91	
60 – Concentrate on getting through one contraction at a time.			.89	
62 – Listen to encouragement from the person helping me.		.53	.66	
52 – Concentrate on an object in the room to distract myself.				.89
59 – Think about others in my family.		.48		.79

A scree plot was produced to give a clearer graphical indication of the pattern of these components. Figure 3.9 shows Cattell's point of inflection at component two, followed by a plateau effect. This suggests a two-component structure of the Efficacy-SS subscale. It seems sensible to disregard components three and four given they only had three and two item loadings respectively. However, four of the nine items loaded onto component two are also loaded onto component one, three of these to a greater extent. This may call into question the usefulness of retaining a second component. Lowe (1993) found the Efficacy-SS subscale to have a single factor accounting for 54.9% of the variance. Clearly the Efficacy-SS subscale has not emerged as robust in the current analysis as even when retaining both components one and two only 52.22% of the variance is accounted for.

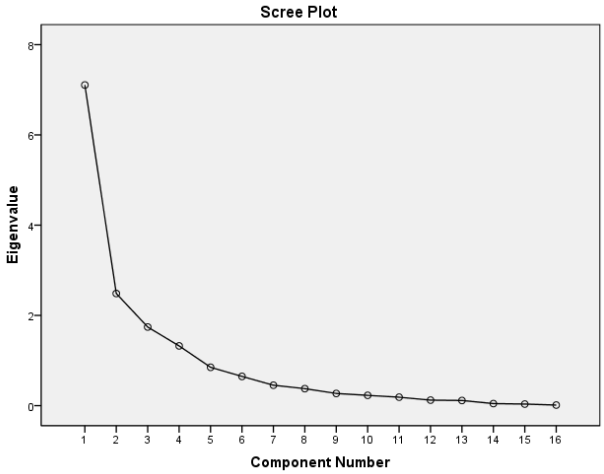

Figure 3.9. Scree plot showing Eigenvalues for each component of the Efficacy-SS subscale of the CBSEI.

Overall the four subscales of the CBSEI were found to have a rather more complex structure than identified by Lowe (1993) however single component structures can be justified for each. The Outcome-AL and Outcome-SS subscales were summed to represent a two-component Outcome-Total scale in the analysis in relation to birth planning conducted in chapter 4. In the same way, the Efficacy-AL and Efficacy-SS subscales were summed to represent a two-component Efficacy-Total scale for analysis. This is in accordance with Lowe's (1993) description of appropriate use of the scale. Outcome and Efficacy will therefore be examined in relation to engagement with and nature of birth planning.

Section 3.7 – Sample characteristics

The sample of 120 pregnant women who took part in the study were asked for some socio-demographic details to ascertain the range of participation across these variables. Results showed that the age range of the sample was 18 – 43 years, with a mean of 29.1 years (5.71).

The occupations of the sample was spread across all seven categories, as shown in table 3.10

Table 3.10

Frequencies and percentages of occupational group of the pregnant sample

Occupational group	Frequency	Percent (%)
Unemployed	2	1.7
Student	11	9.2
Home maker	18	15
Unskilled worker	11	9.2
Skilled worker	5	4.2
White collar worker	41	34.2
Professional	32	26.7

Table 3.10 shows that the modal occupations were in the white collar group, with also quite high frequencies for professional women. The sample consisted of very few unemployed women and women with skilled occupations were also in a minority.

The spread of ethnic groups was quite skewed towards white British women, due to the lack of ethnic diversity in the area the study was conducted in. However, there were at least some participants representing each of the ethnic groups described in the study, as shown in table 3.11.

Table 3.11

Frequencies and percentages of ethnic group of the pregnant sample and the local population

Ethnic group	Frequency	Percent	Local representation (%)
White / White British	100	83.3	97
Black / Black British	1	0.8	0.34
Asian / Asian British	11	9.2	0.95
Mixed	2	1.7	0.7
Other	5	4.2	0.64
Declined to answer	1	0.8	

Table 3.11 shows the high percentage of white women in the sample, with a reasonable proportion of Asian women represented but few of other ethnic groups. However, data from the Office for National Statistics (www.ons.gov.uk/search/index.html?newquery=ethnic+group) on the ethnicity of the population in which the study was conducted show that the predominance of white / white British people in the area is even higher. The second highest group in the general population of this locality is Asian / Asian British. This is the same second highest group in this study but again the representation of this group in the study is higher than in the general population. The ethnic group who is least represented in both the study and the area generally is the black / black British group. These figures show that the study has a spread of ethnic groups that largely reflect the proportionate ethnicity of the local population generally but that the study has achieved greater diversity in its sample.

The presence of medical conditions in the pregnant sample that may impact upon their birth were assessed according to severity. Table 3.12 shows the extent of these conditions.

Table 3.12

Frequencies and percentages for medical conditions reported in the pregnant sample

Medical conditions	Frequency	Percentage (%)
None	95	79.2
Mild	8	6.7
Moderate	10	8.3
Severe / complex	7	5.8

Table 3.12 shows that the majority of the sample had no medical conditions that may affect their birth. However, around 20% of the sample had existing medical conditions ranging from mild to severe that may have an impact on their labour and / or delivery. This may affect the choices for childbirth for these women.

In terms of factors relating to the actual pregnancy in this sample, participants were asked about parity, ante-natal class attendance, and whether they had a birth plan. Table 3.13 shows the responses to these variables.

Table 3.13

Frequencies (and percentages) for parity, antenatal class attendance and birth plan completion.

Variable	Yes	No
First baby	65 (54.2%)	55 (45.8%)
Antenatal class attendance	73 (60.8%)	47 (39.2%)
Birth plan completion `	68 (56.7%)	52 (43.3%)

The results in table 3.13 show that slightly more primiparous women participated in the study than multiparous women. Also, the majority of women attended, or planned to attend, antenatal classes during this pregnancy. Just over half of the sample had completed or intended to complete a birth plan. The distinction between birth planners and non-birth planners formed the basis for exploring differences on all interval variables in Chapter 4.

Section 3.8 – Establishing reliability of birth plan coding

This section explains how the reliability of the birth plan coding was verified in preparation for its analysis in relation to other variables in chapter 4. A coding scheme for the content analysis of the birth plans was established (see Appendix I). This was based upon the range of types of decisions that could conceivably be made for birth by the childbearing woman. Decisions that would be representative of each decision type were then listed until the coding manual appeared to reflect a comprehensive range of decisions and classifications. Checks were made across a range of literature to ensure that no major omissions had been made. Sources for this purpose included midwifery texts (Fraser & Cooper, 2003; Kirkham, 2004), pregnancy books (Kitzinger, 1989; Iovine, 1997) and websites (www.babycentre.co.uk; www.babyworld.co.uk; www.bounty.com; www.emmasdiary.co.uk; www.thebump.com; www.whattoexpect.co.uk). The decisions in each plan were counted according to the type of decision identified. The five types were: pain control decisions; position decisions, environment decisions, support decisions; and medical decisions. The total number of decisions in each plan was then calculated. Inter-rater reliability was established by a second coder analysing a sample of 20 of these birth plans (>20%).

Each sentence of every birth plan was treated as an event. The category to which each coder had assigned events was compared in an online table for calculating Cohen's Kappa (www.graphpad.com/quickcalcs/Kappa2.cfm). The resulting matrix is shown in table 3.14.

Table 3.14

Inter-rater agreement for types of decisions in birth plans.

		Rater 1						
	Category	PC	E	P	S	M	No	Total
Rater 2								
	PC	33	0	0	0	0	1	34
	E	0	13	0	0	0	1	14
	P	0	0	6	0	0	0	6
	S	0	0	0	13	1	1	15
	M	2	0	0	0	9	2	13
	No	4	2	2	0	1	10	19
	Total	39	15	8	13	11	15	101

Category key: PC = Pain control decisions; E = Environment decisions; P = Position decisions; S = Support decisions; M = Medical decisions; No = No decisions.

The total number of observed agreements identified from table 3.14 was 84 (representing 83.17% of the observations). The number of agreements that could be expected by chance were calculated at 21.9 (21.64% of the observations). The Kappa value of these agreements was 0.79. The standard error of Kappa was 0.05, with 95% confidence intervals from 0.69 – 0.88. Therefore the strength of agreement between the first and second raters was ‘good’. This gave a good indication that the birth plans were coded reliably and could be used in further analysis.

Chapter 4 – Influences in Birth Planning

Section 4.1 – Birth planners compared with non-birth planners

Women's completion of, or intention to complete, a birth plan was compared with women who did not have or intend to use a birth plan on variables from T1 in order to address research question 1 (What factors influence women's use of birth plans and what types of decisions are made in them?). From consideration of the data presented in Chapter 3, as well as the statistical power of the sample, the alpha level was set at .01 in an attempt to avoid making type 1 errors. The variables from the standard measures included in this analysis are outlined in table 4.1:

Table 4.1

The scales and the subscales contained within them that were analysed in relation to birth planning, as presented in chapter 4.

Scale	Subscale
Attitudes Towards Doctors and Medicines Scale	Positive Attitudes Towards Doctors
Multidimensional Health Locus of Control	Internal Health Locus of Control Powerful others Health Locus of Control
Cybernetic Coping Scale	Change the Situation Accommodation Devaluation Avoidance
Multidimensional Scale of Perceived Social Support	Significant Other Family Friends
Beliefs about Pain Control Questionnaire	Internal pain Powerful Doctors pain
Childbirth Self-Efficacy Inventory	Outcome-Total Efficacy-Total

Other variables included in this analysis were: Age; occupation; ethnic group; ante-natal class attendance; parity; midwife seen; general health; health knowledge; sufficient information; where to find information; asking midwife questions; and birth expectancies.

The following sections present results of analysis of each variable based on birth planning and are organised by measure or group of results. As some variables produced significant Levene's tests, results are reported as not assuming equal variances throughout.

Section 4.1.1 – Demographic differences in birth planning. This section considers differences in age, occupation, ethnic group, ante-natal class attendance, parity and midwife seen in relation to whether women consider themselves to have a birth plan or not.

Section 4.1.1.1 – Age differences in birth planning. This section examines the differences in mean age between women who did and women who did not use a birth plan.

Table 4.2

Mean ages and standard deviations for women who did or did not use a birth plan.

Variable	Birth plan		No birth plan	
	Mean	S.D.	Mean	S.D.
Age (years)	27.88	5.98	30.69	4.97

The age difference of nearly three years between women who did and did not use a birth plan showed a significant difference between the two groups [t(117.14) = -2.81, p = .007, d = 0.5]. Older women were significantly less likely to use a birth plan than younger women and the difference of approximately 1.0 in standard deviations in the two groups shows similar variance.

Section 4.1.1.2 – Occupational differences in birth planning. This section examines the differences in occupation between women who did and women who did not use a birth plan.

Table 4.3

Observed and expected counts for occupations of women who did and women who did not use a birth plan.

Occupation	Birth plan		No birth plan	
	Observed	Expected	Observed	Expected
Student	7	6.1	4	4.9
Home-maker	9	10.0	9	8.0
Unskilled worker	9	6.1	2	4.9
White collar worker	22	22.9	19	18.1
Professional	16	17.8	16	14.2

Table 4.3 shows similarities between the observed and expected counts for five of the occupational groups in terms of whether or not they used a birth plan. The unemployed and skilled worker categories were omitted from the analysis due to the low numbers (two and five respectively) of each. Including these categories would have caused six cells to have expected counts of less than five, which exceeds the one or two advocated as acceptable by Langdridge (2004). The five categories analysed produced two cells with an expected count of less than five. Chi-squared analysis confirmed that there were no significant differences between women who did and did not use a birth plan in terms of their occupational group [$\chi^2(4) = 4.05$, p=.399].

Section 4.1.1.3 – Ethnic differences in birth planning. This section examines differences in ethnic group between women who did and women who did not use a birth plan. The small numbers of women in the current sample who described themselves as Black, mixed race or other ethnic group made too few expected counts in these cells. Therefore these ethnic groups had to be omitted from the analysis, along with one participant who had not indicated her ethnic group. This left a comparison between White and Asian women in terms of their birth plan use.

Table 4.4

Observed and expected counts for the ethnic group of women who did and women who did not use a birth plan.

Ethnic group	Birth plan		No birth plan	
	Observed	Expected	Observed	Expected
White/White British	58	59.5	42	40.5
Asian/Asian British	8	6.5	3	4.5

Only one cell contained an observed count of less than 5. The minimum expected count was 4.46, which was exceeded in each cell. Table 4.4 shows that Asian/Asian British women used birth plans slightly more than expected, though this difference was not statistically significant [$\chi^2(1) = 0.89$, p=.345].

Section 4.1.1.4 – Differences in ante-natal class attendance in birth planning. This section compares women who did and women who did not attend ante-natal classes with women who did and women who did not use a birth plan.

Table 4.5

Observed and expected counts for women who did and women who did not attend ante-natal classes compared with women who did and women who did not use a birth plan.

Ante-natal class	Birth plan		No birth plan	
	Observed	Expected	Observed	Expected
Attended	45	41.4	28	31.6
Did not attend	23	26.6	24	20.4

Table 4.5 shows that more women who attended ante-natal classes also used a birth plan. This group formed the majority of women. Women who did not attend antenatal classes tended to also not use a birth plan. However, these differences were not statistically significant [$\chi^2(1) = 1.88$, p=.170].

Section 4.1.1.5 – Differences in parity and birth planning. This section compares primiparous and multiparous women on their use of birth plans.

Table 4.6

Observed and expected counts for primiparous and multiparous women both with and without birth plans.

Parity	Birth plan		No birth plan	
	Observed	Expected	Observed	Expected
Primiparous	38	36.8	27	28.2
Multiparous	30	31.2	25	23.8

More women in both the primiparous and multiparous groups had birth plans than did not have birth plans, however more primiparous women had birth plans than did multiparous women. This difference was not significant [χ^2 (1) = 0.19, p = .666].

Section 4.1.1.6 – Differences in midwife and birth planning. This section compares women who attended the four different Children's Centres that took part in the current study for ante-natal appointments and their use of birth plans.

Table 4.7

Observed and expected counts for women who attended each of the four Children's Centres for ante-natal care and their use of birth plans.

Children's Centre	Birth plan		No birth plan	
	Observed	Expected	Observed	Expected
A	17	17.6	14	13.4
B	25	28.3	25	21.7
C	5	4	2	3
D	21	18.1	13.9	11

Two of the cells in Table 4.7 had an expected count of less than five. Langdridge (2004) suggests that one or two cells with an expected count of less than five are acceptable in samples of more than 20. The minimum expected count was 3.03. One cell had an expected count of .03 less than this. Women from Children's Centre B tended not to use birth plans more than expected. Women from Children's Centre D tended to use birth plans more than expected. However these differences were not statistically significant [$\chi^2(3) = 2.61$, p=.455].

Section 4.1.1.7 – Summary of demographic differences in birth planning. Women who did and women who did not use a birth plan were compared across the demographic variables: Age; parity; occupation; ethnic group; ante-natal class attendance; and midwife (Children's centre). Results of analysis showed that of these variables, only age showed a statistically significant difference between women who did and women who did not use a birth plan. Birth planners were significantly younger than non-birth planners.

Section 4.1.2 – Health status and knowledge differences in birth planning. This section compares women who did and did not use a birth plan on their self-rated general health status and health knowledge. These two single-item measures were scored from 1 – 10 where high scores indicate good general health status and health knowledge. The lowest score on each scale was therefore 1 and the highest 10. Table 4.8 shows the descriptive statistics for these scales between women with and without a birth plan.

Table 4.8

Means and standard deviations of General Health Status and Health Knowledge scores between women with and without birth plans.

Variable	Birth plan		No birth plan	
	Mean	S.D.	Mean	S.D.
General Health Status	8.38	0.96	8.69	0.94
Health Knowledge	8.16	1.18	7.77	1.35

Table 4.8 shows that the means on both single-item scales were similar between women with and without birth plans. Women generally rated both their General Health Status and Health Knowledge quite highly and there was no significant differences between women with and women without birth plans on either General Health Status [t (111.16) = -1.77, p =.079] or Health Knowledge [t (101.48) = 1.66, p = .099].

Section 4.1.3 – Information-seeking confidence differences in birth planning. This section considers differences on the three questions on information-seeking between women with and women without birth plans. The questions asked whether women felt they: Had sufficient information to make informed choices for birth; knew where to find such information; and could ask their midwife questions. Each question was rated on a scale of 1 – 5 where higher scores indicated greater agreement with the statement. The lowest score for each question was 1 and the highest was 5. Table 4.9 shows the descriptive statistics for these questions between women with and women without a birth plan.

Table 4.9

Means and standard deviations of information-seeking confidence question scores between women with and women without a birth plan.

Variable	Birth plan		No birth plan	
	Mean	S.D.	Mean	S.D.
Sufficient information	4.25	0.68	4.21	0.50
Where to find information	4.34	0.54	4.19	0.49
Ask midwife questions	4.66	0.48	4.46	0.50

Table 4.9 shows means for all three questions across both groups to be between four and five, showing a good level of agreement with each statement. For each question the birth plan group produced slightly higher means than did the no birth plan group but these differences were minimal and not significant for: Sufficient information [t (117.85) = .36, p = .721]; information location [t (114.47) = 1.56, p =.122]; and asking midwife questions [t (106.72) = 2.21, p = .029].

Section 4.1.4 – Birth expectancies differences in birth planning. This section considers differences in birth expectancy ratings between birth planners and non-birth planners. Birth expectancies were rated on a scale of 1 – 5 where 1 represented very negative expectations of birth and 5 represented very positive expectations of birth. Table 4.10 shows the descriptive statistics for birth expectancies for women with and women without a birth plan.

Table 4.10

Means and standard deviations of birth expectancy scores between women with and women without a birth plan.

Variable	Birth plan		No birth plan	
	Mean	S.D.	Mean	S.D.
Birth expectancies	3.97	0.71	3.96	0.56

Table 4.10 shows very close means for women with and women without birth plans in terms of their expectations of birth. This was further evidenced in the non-significant t-test result [t (117.91) = 0.08, p = .938].

Section 4.1.5 – Health Locus of Control differences in birth planning. This section considers differences in health locus of control between birth planners and non-birth planners. The two subscales used from the Multidimensional Health Locus of Control Scale (Wallston et al., 1978) were the Internal Health Locus of Control (IHLC) subscale and Powerful others Health Locus of Control (PHLC) subscale. Each of these subscales contained six items scored from 1 – 6, giving a minimum score of 6 and a maximum score of 36, where a high score indicates a more internally or externally located perception of health control. Table 4.11 shows the descriptive statistics for these subscales between women with and without a birth plan.

Table 4.11

Means and standard deviations of Internal (IHLC) and Powerful others Health Locus of Control (PHLC) scores between women with and without birth plans.

Variable	Birth plan		No birth plan	
	Mean	S.D.	Mean	S.D.
IHLC	20.32	3.01	22.50	2.25
PHLC	16.35	4.81	15.06	4.44

The findings in table 4.11 show that women without birth plans score more than 2 points higher on the IHLC subscale than women with birth plans. This suggests that women without birth plans consider the control of their health to be significantly more internally located than women with birth plans [t (117.74) = -4.61, p <.001, d = 0.8]. However, the difference between women with and without birth plans on the PHLC is smaller at just over one point difference and in the opposite direction to results for the IHLC. Women with birth plans scored slightly higher on the PHLC but this difference was not significant [t (113.76) =1.53, p = 129].

Section 4.1.6 – Coping differences in birth planning. This section considers the four remaining subscales of the Cybernetic Coping Scale short (15item) version (Guppy et al., 2004) following omission of the Symptom Reduction subscale for the reasons of reliability and validity considered in Chapter 3. The remaining subscales were: Change the Situation; Accommodation; Devaluation; and Avoidance. Each subscale contained three items, which were scored from 1 – 5 where higher scores indicated stronger use of that coping style. Therefore scores on each subscale could range from a minimum of 3 to a maximum of 15. Table 4.12 gives the descriptive statistics for the subscales of the CCS for women with and without birth plans.

Table 4.12

Means and standard deviations for scores on the Change the Situation subscale for women with and without birth plans.

Variable	Birth plan		No birth plan	
	Mean	S.D.	Mean	S.D.
Change the Situation	11.0	2.2	9.33	1.88
Accommodation	9.41	1.74	8.89	1.49
Devaluation	8.91	1.63	8.67	1.78
Avoidance	8.85	1.75	8.44	1.75

Results from the Change the Situation subscale show that women with birth plans scored significantly higher than women without birth plans [t (116.55) = 4.49, p <.001, d = 0.8]. Standard deviations between the two groups were similar. Women with birth plans are more likely to adopt the coping strategy of Change the Situation than women who do not use birth plans. Mean scores on the other three subscales of the CCS were more similar and no significant differences were found between women with and without birth plans on: Accommodation [t (116.41) = 1.79, p = .077]; Devaluation [t (104.56) = 0.76, p = .452]; or Avoidance [t (109.76) = 0.27, p = .788].

Section 4.1.7 – Social support differences in birth planning. This section considers differences between birth planners and non-birth planners on the three subscales of the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988): Significant other; family and friends. Each of these subscales contained four items rated from 1 – 7, where high scores indicate a high level of perceived social support from that source. Therefore scores on these subscales could range from a minimum of 4 to a maximum of 28. Table 4.13 shows the descriptive statistics for the Significant Other, Family and Friends subscales for women with and without birth plans.

Table 4.13

Means and standard deviations for scores on the Significant Other, Family and Friends subscales of the MSPSS for women with and without birth plans.

Variable	Birth plan		No birth plan	
	Mean	S.D.	Mean	S.D.
Significant Other	25.21	3.34	26.86	2.26
Family	24.78	3.64	25.08	2.71
Friends	22.87	4.11	22.35	3.85

Table 4.13 shows that scores on the Significant Other subscale were generally quite high in both groups, given a maximum score of 28. However, women without a birth plan perceived their significant others as a greater source of social support than women with a birth plan [t (116.37) = -3.24, $p < .01$, $d = 0.6$]. Scores for Family and Friends were lower, particularly for the latter, but very close in both cases. There were no significant differences between birth planners and non-birth planners in perceived Family support [t (117.94) = -.51, $p = .609$] or in perceived support from Friends [t (111.86) = 0.72, $p = .471$].

Section 4.1.8 – Differences in beliefs about pain control in birth planning. This section considers differences between birth planners and non-birth planners on the two subscales from the Beliefs about Pain Control Questionnaire (Skevington, 1990): Internal pain control and Powerful Doctors pain control. The Internal pain control subscale contained five items scored from 1 – 6, where high scores indicate extent of agreement that pain is internally controlled. The minimum score on this subscale was 5 and the maximum was 30. The Powerful Doctors pain control subscale contained four items scored from 1 – 6, where high scores indicate extent of agreement that powerful doctors control pain. The minimum score on this subscale was 4 and the maximum was 24. Descriptive statistics for these subscales for women with and without birth plans are presented in table 4.14.

Table 4.14

Means and standard deviations for the Internal and Powerful Doctors subscales of the BPCQ for women with and without birth plans.

Variable	Birth plan		No birth plan	
	Mean	S.D.	Mean	S.D.
Internal	15.15	3.46	14.89	4.01
Powerful Doctors	13.16	3.85	10.60	2.49

Table 4.14 shows the means for all groups were towards the middle and lower end of the scale but women with birth plans reported significantly higher beliefs that doctors were powerful in pain control with 2.56 higher scores [t (115.12) = 4.42, p <.001, d = 0.8]. Means for Internal pain control were closer and not significant between women with and without birth plans [t (100.71) = 0.38, p = .707].

Section 4.1.9 – Differences in childbirth self-efficacy in birth planning.

This section considers differences between birth planners and non-birth planners on the Outcome-Total and Efficacy-Total subscales of the Childbirth Self-Efficacy Inventory (Lowe, 1993). The Outcome-Total subscale comprised the sum of the Outcome-AL and Outcome-SS subscales and the Efficacy-Total subscale comprised the sum of the Efficacy-AL and Efficacy-SS subscales. The Outcome-AL and Efficacy-AL subscales each contained 15 items scored from 1 – 10, where high scores indicate strength of outcome or efficacy expectancies for active labour. The minimum score on these subscales was 15 and the maximum was 150. The Outcome-SS and Efficacy-SS subscales each contained 16 items scored from 1 – 10, where high scores indicate strength of outcome or efficacy expectancies for second stage labour. The minimum score on these subscales was 16 and the maximum was 160. When summed, the Outcome-Total and Efficacy-Total subscales each comprised 31 items. The minimum score on each subscale was 31 and the maximum was 310. Descriptive statistics for the Outcome-Total and Efficacy-Total subscales for women with and without birth plans are presented in table 4.15.

Table 4.15

Means and standard deviations for the Outcome-Total and Efficacy-Total subscales of the CBSEI for women with and without birth plans.

Variable	Birth plan		No birth plan	
	Mean	S.D.	Mean	S.D.
Outcome-Total	239.94	34.39	247.02	38.08
Efficacy-Total	181.91	43.50	196.79	35.27

Table 4.15 shows that outcome expectancy means were higher in women with and women without birth plans than self-efficacy expectancy means in both groups. On the Outcome-Total subscale women without a birth plan scored higher than women with a birth plan, however this difference was not significant [t (103.75) = -1.05, p = .295]. Women without a birth plan also scored higher on average than women with a birth plan on the Efficacy-Total subscale. Here the difference was larger and was statistically significant [t (117.57) = -2.07, p = .041].

Section 4.1.10 – Summary of birth planner analysis. In summary, the results for the variables compared between birth planners and non-birth planners show that women with birth plans tend to: be younger, have lower levels of internal health control, use changing the situation as a coping style, perceive lower social support from their significant others, and consider doctors as powerful in pain control. This begins to create a profile of birth planners as younger women, who feel unsupported by partners, consider that they have little control over their health or pain, and use problem-focussed coping styles.

Section 4.2 – Types of birth plan

Participants in the pregnant sample were asked to describe in writing any decisions they had made for childbirth. Only 13 of the 120 women left this section blank, despite 52 of them having said they had no birth plans.

Section 4.2.1 – Types and number of decisions in birth plans. Table 4.16 shows the number of decisions of different types identified in these birth plans.

Table 4.16

Number (percentages) and types of decisions identified in women's birth plans.

Number	Total decisions	Pain control decisions	Position decisions	Environment decisions	Support decisions	Medical decisions
0	13 (10.8)	28 (23.3)	81 (67.5)	45 (37.5)	52 (43.3)	70 (58.3)
1	17 (14.2)	37 (30.8)	31 (25.8)	55 (45.8)	68 (56.7)	35 (29.2)
2	6 (5.0)	35 (29.2)	8 (6.7)	20 (16.7)		10 (8.3)
3	16 (13.3)	4 (3.3)				5 (4.2)
4	11 (9.2)	16 (13.3)				
5	23 (19.2)					
6	16 (13.3)					
7	13 (10.8)					
8	5 (4.2)					

Table 4.16 shows that whilst some women stated no or few preferences for childbirth, others had quite detailed plans by their third trimester and decisions were identified in all five decision types. Figure 4.1 shows the total number of decisions of each type identified in the written accounts provided by the pregnant sample.

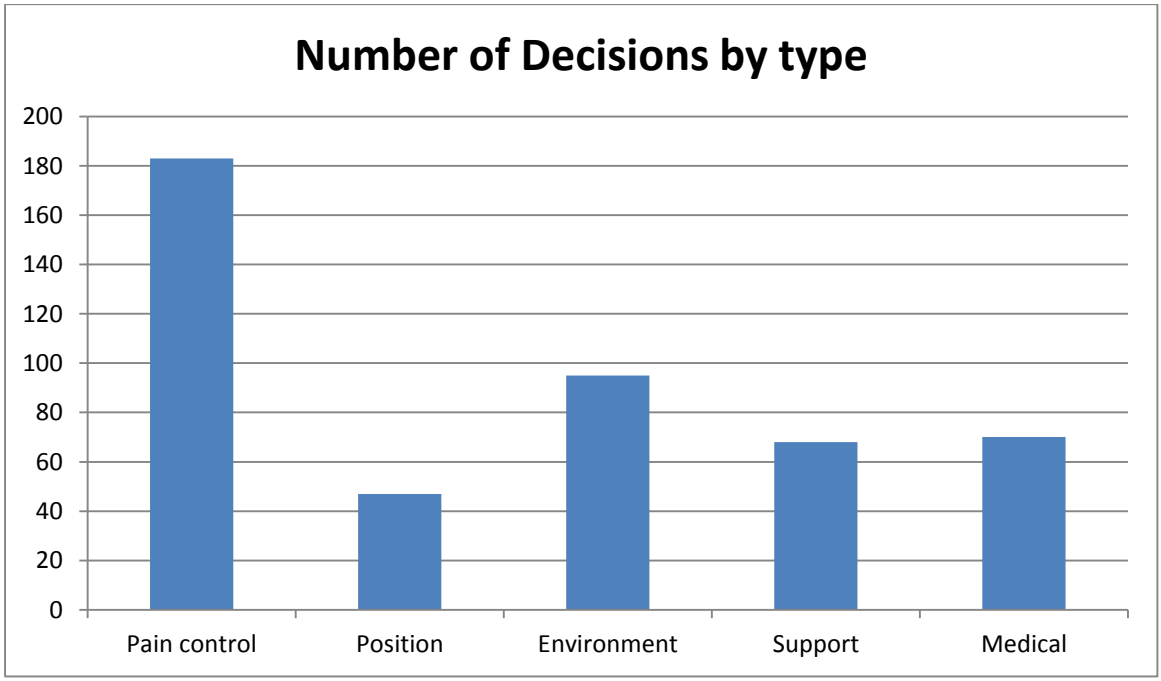

Figure 4.1. Total number of decisions of each type identified in the written accounts of birth plans.

It is clear from figure 4.1 that decisions about pain control were the most common, followed by decisions about environment. Support (68) and medical (70) decisions scored very similarly, with decisions about position being the least common.

Section 4.2.2 – Associations with the number of decisions in birth plans.

In order to identify the characteristics of women who make the most decisions about childbirth, the number of decisions was firstly correlated with scores from all variables with continuous data. Table 4.17 shows the associations between the number of decisions in birth plans and these variables.

A total of three medium sized correlations were identified as significant at .01. A positive correlation was found between the number of decisions in women's birth plans and their scores on the Change the Situation subscale, indicating that women who adopt the Change the Situation coping style make more decisions in preparation for childbirth. Also from the CSS, the Accommodation subscale was positively correlated with the number of decisions in the birth plan, suggesting that women adopting the Accommodation coping style also tend to make more decisions about childbirth. The remaining significant correlation involved a subscale from the CBSEI. The Outcome-total subscale was negatively correlated with the number of decisions suggesting that women who scored low on childbirth outcome-expectations made more decisions for childbirth.

Table 4.17

Associations between the number of decisions in birth plans on continuous data variables (N=120).

Variable	*r*	*p*
Age	-.068	.458
Medical conditions	.172	.060
General health	.145	.114
Health knowledge	.001	.988
Sufficient information	-.052	.569
Where to find information	-.083	.365
Asking midwife questions	-.030	.746
Positive Attitudes towards Doctors	-.019	.836
Internal Health Locus of Control	.063	.492
Powerful Others Health Locus of Control	-.002	.984
Change the situation	.422	.001
Accommodation	.275	.002
Devaluation	-.021	.818
Avoidance	-.068	.463
Significant other	.022	.814
Family	.064	.488
Friends	.001	.995
Internal pain	.041	.654
PD pain	.066	.474
Birth expectancies	-.095	.301
Efficacy-total	.185	.043
Outcome-total	-.296	.001

Section 4.2.3 – Differences in the number of decisions in birth plans.

Differences in the number of decisions made in birth plans were further analysed in terms of a range of demographic and health behavioural variables.

Table 4.18

Means and standard deviations of number of decisions in birth plans for parity, occupation, ethnic group, antenatal class attendance, use of birth plans and clinic attended.

Variable		Mean	S.D.
Parity	Primiparous	4.17	2.59
	Multiparous	3.49	2.11
Occupation	Unemployed	5.00	2.83
	Student	5.64	0.92
	Home-maker	3.11	2.10
	Unskilled worker	3.64	1.86
	Skilled worker	5.60	1.34
	White collar worker	3.17	2.34
	Professional	4.28	2.83
Ethnic group	White / white British	3.77	2.38
	Asian / Asian British	3.46	2.58
	Mixed	6.00	0.00
	Other	5.80	0.45
Antenatal class	Attender	4.00	2.68
	Non-attender	3.64	1.88
Birth plan	User	4.22	2.12
	Non-user	3.39	2.66
Clinic attended	A	3.90	2.45
	B	4.32	2.38
	C	6.43	0.98
	D	2.53	1.85

Comparison of the mean number of decisions in birth plans between each group in these variables showed no significant difference at $p < .01$ in: Parity [t (117.84) = -1.58, p = .116]; occupation [F (6,119) = 2.81, p = 0.14]; ethnic group [F (5,119) = 2.01, p = .08]; or ante-natal class attendance [t (117.03) = .87, p = .39].

A significant difference was identified in the number of decisions in women's birth plans with regard to the location of the data origin [F (3,119) = 7.70, p <.001]. The sample came from antenatal clinics at four different Children's Centres and women saw different midwives at each of these centres. Women usually attend the Children's Centre nearest to their home for convenience so differences here may reflect the midwife serving the clinic or the demographic of the area. In order to preserve anonymity the Children's Centres are referred to as Clinic A, Clinic B, Clinic C, and Clinic D. Tukey's post hoc tests identified that the differences laid between Clinic B and Clinic D (p =.003) and between Clinic C and Clinic D (p <.001). Examination of the means for these clinics revealed that women from Clinic D made the fewest decisions and women from Clinic C made the most.

In order to follow up these differences a Pearson Chi-Square test was performed on the occupational status of the sample and the antenatal clinic they attended. A significant difference [χ^2 (18) = 70.43, p <.001] identified that women from Clinic D, who made the fewest decisions, tended to be white collar workers, as did women from Clinic C, who made the most decisions. On this basis it does not appear that the number of decisions in women's birth plans can be attributed to socio-demographic factors.

Section 4.2.4 – Associations with pain control decisions. The five types of decisions present in the birth plans were each correlated with data from the subscales and age, general health, health knowledge, and birth expectancies. This section considers the associations between these variables and the decisions about pain control in birth plans.

Table 4.19

Associations between the number of pain control decisions in birth plans and continuous data variables (N=120).

Variable	*r*	*p*
Age	-.097	.292
Medical conditions	.048	.605
General health status	-.018	.848
Health knowledge	-.088	.337
Sufficient information	-.096	.298
Where to find information	-.133	.149
Asking midwife questions	-.124	.179
Positive Attitude towards Doctors	-.086	.350
Internal Health Locus of Control	.171	.062
Powerful Others Health Locus of Control	-.020	.831
Change the situation	.071	.441
Accommodation	.167	.068
Devaluation	.252	.006
Avoidance	.176	.055
Significant other	.043	.638
Family	-.047	.607
Friends	-.050	.587
Internal pain control	.165	.071
Powerful Doctors pain control	-.174	.057
Birth expectancies	-.112 `	.223
Outcome-total	.120	.192
Efficacy-total	-.319	.001

Decisions about pain control were significantly positively correlated with the Devaluation subscale of the CCS. This suggests that women who adopt the Devaluation coping style tend to make more decisions about pain control in their birth plans. The efficacy subscale from the CBSEI was negatively correlated with pain control decisions. Women who scored low in childbirth self-efficacy made more decisions about pain control.

Section 4.2.5 – Differences in pain control decisions. Differences in the number of pain control decisions made in birth plans were further analysed in terms of a range of demographic and health behavioural variables.

Table 4.20

Means and standard deviations of number of pain control decisions in birth plans for parity, occupation, ethnic group, antenatal class attendance, use of birth plans and clinic attended.

Variable		Mean	S.D.
Parity	Primiparous	1.65	1.37
	Multiparous	1.38	1.11
Occupation	Unemployed	2.00	0.00
	Student	2.46	1.29
	Home-maker	1.17	0.99
	Unskilled worker	1.73	0.91
	Skilled worker	1.60	1.34
	White collar worker	1.10	0.97
	Professional	1.84	1.61
Ethnic group	White / white British	1.43	1.19
	Asian / Asian British	1.27	1.19
	Mixed	3.00	0.00
	Other	3.80	0.45
Antenatal class	Attender	1.55	1.40
	Non-attender	1.49	1.04
Birth plan	User	1.66	1.19
	Non-user	1.35	1.34
Clinic attended	A	1.42	1.31
	B	1.74	1.45
	C	2.00	0.00
	D	1.19	0.93

Comparison of the mean number of pain control decisions in birth plans between each group in these variables showed no significant difference at $p < .01$ in: Parity [t (117.80) = -1.16, p = .247]; occupation [F (6,119) = 2.66, p = .019]; ethnic group

(comparing white/Asian only due to *n* in other categories) [*t* (12.31) = 0.42, *p* = .685]; antenatal class attendance [*t* (115.38) = .263, *p* = .793]; birth plan use [*t* (102.70) = 1.34, *p* = .183]; or clinic attended [F (3,119) = 1.67, *p* = .176].

Section 4.2.6 - Associations with position decisions. Decisions about positions in labour and delivery were examined in relation to the subscales and age, general health status, health knowledge and birth expectancies.

Table 4.21

Associations between the number of position decisions in birth plans and continuous data variables (N=120).

Variable	*r*	*p*
Age	-.208	.022
Medical conditions	.154	.093
General health status	.239	.009
Health knowledge	.123	.181
Sufficient information	.023	.799
Where to find information	.028	.757
Asking midwife questions	.082	.372
Positive Attitude towards Doctors	.347	.001
Internal Health Locus of Control	-.095	.301
Powerful Others Health Locus of Control	.316	.001
Change the situation	.415	.001
Accommodation	.303	.001
Devaluation	-.227	.013
Avoidance	-.229	.012
Significant other	.079	.388
Family	.330	.001
Friends	.183	.045
Internal pain control	.065	.482
Powerful Doctors pain control	.261	.004
Birth expectancies	.351	.001
Outcome-total	.200	.029
Efficacy-total	.090	.330

Decisions about positions in labour and delivery were positively associated with a range of variables from across the measures. Women who made the most decisions about positions in labour and delivery also scored highly on: general health; Positive Attitudes towards Doctors; Powerful others control; Change the Situation; Accommodation; Family support; Powerful Doctors pain control; and birth expectancies.

Section 4.2.7 – Differences in position decisions. Differences in the number of position decisions made in birth plans were further analysed in terms of a range of demographic and health behavioural variables.

Comparison of the mean number of position decisions in birth plans between each group in these variables showed no significant difference at $p < .01$ in: Ethnic group (comparing white/Asian only due to *n* in other categories) [t (13.17) = -.206, p = .840]; antenatal class attendance [t (115.38) = .26, p = .032]; or birth plan use [t (116.45) = 1.07, p = .289].

Primiparous women were significantly more likely than multiparous women to make decisions about position for labour and delivery in their birth plans [t(107.45) = -2.72, p =.008, d = 0.5]. The position decisions also showed a significant difference in terms of occupational status [F (6,119) = 11.74, p <.001]. Tukey's post hoc tests showed these differences lay between students and: the unemployed (p =.004); home-makers (p <.001); unskilled workers (p <.001); white collar workers (p <.001); and professionals (p <.001). Examination of the descriptive statistics revealed that students made the most decisions about positions for labour and delivery and the unemployed made no such decisions. Finally a significant difference was found in the position decisions made by women from different clinics [F (3,119) = 8.005, p = <.001]. Tukey's post hoc tests showed that this difference lay between clinics B and D (p <.001), with clinic B women making more position decisions.

Table 4.22

Means and standard deviations of number of position decisions in birth plans for parity, occupation, ethnic group, antenatal class attendance, use of birth plans and clinic attended.

Variable		Mean	S.D.
Parity	Primiparous	0.52	0.71
	Multiparous	0.24	0.43
Occupation	Unemployed	0.00	0.00
	Student	1.46	0.69
	Home-maker	0.56	0.62
	Unskilled worker	0.27	0.65
	Skilled worker	0.80	0.45
	White collar worker	0.20	0.40
	Professional	0.19	0.40
Ethnic group	White / white British	0.33	0.59
	Asian / Asian British	0.36	0.51
	Mixed	2.00	0.00
	Other	1.00	0.00
Antenatal class	Attender	0.48	0.69
	Non-attender	0.26	0.44
Birth plan	User	0.44	0.70
	Non-user	0.33	0.47
Clinic attended	A	0.42	0.50
	B	0.64	0.75
	C	0.00	0.00
	D	0.06	0.25

Section 4.2.8 - Associations with environment decisions. Decisions about environment for labour and delivery were examined in relation to the subscales and age, general health status, health knowledge and birth expectancies.

Table 4.23

Associations between the number of environment decisions in birth plans and continuous data variables (N=120).

Variable	*r*	*p*
Age	.121	.187
Medical conditions	.016	.859
General health status	.073	.428
Health knowledge	.180	.049
Sufficient information	.056	.547
Where to find information	.089	.335
Asking midwife questions	.081	.382
Positive Attitude towards Doctors	.247	.006
Internal Health Locus of Control	-.088	.339
Powerful others Health Locus of Control	.068	.461
Change the situation	.416	.001
Accommodation	.026	.780
Devaluation	-.062	.504
Avoidance	-.046	.621
Significant other	.004	.962
Family	.053	.562
Friends	.085	.353
Internal pain control	-.087	.344
Powerful Doctors pain control	.271	.003
Birth expectancies	-.052	.574
Outcome-total	.197	.031
Efficacy-total	-.067	.468

Decisions about the environment for labour and delivery were positively associated with three of the continuous data variables: Positive Attitudes towards Doctors; Change the Situation; and Powerful Doctors pain control.

Section 4.2.9 – Differences in environment decisions. Differences in the number of environment decisions made in birth plans were further analysed in terms of a range of demographic and health behavioural variables.

Table 4.24

Means and standard deviations of number of environment decisions in birth plans for parity, occupation, ethnic group, antenatal class attendance, use of birth plans and clinic attended.

Variable		Mean	S.D.
Parity	Primiparous	0.77	0.79
	Multiparous	0.82	0.61
Occupation	Unemployed	1.50	0.71
	Student	0.82	0.98
	Home-maker	0.67	0.59
	Unskilled worker	0.64	0.67
	Skilled worker	1.20	0.45
	White collar worker	0.71	0.68
	Professional	0.91	0.73
Ethnic group	White / white British	0.86	0.71
	Asian / Asian British	0.73	0.65
	Mixed	0.00	0.00
	Other	0.00	0.00
Antenatal class	Attender	0.77	0.79
	Non-attender	0.83	0.56
Birth plan	User	0.91	0.73
	Non-user	0.64	0.66
Clinic attended	A	1.03	0.55
	B	0.72	0.76
	C	1.71	0.49
	D	0.47	0.57

Comparison of the mean number of environment decisions in birth plans between each group in these variables showed no significant difference at $p < .01$ in: Parity [t (117.22) = .38, p = .702]; occupation [F (6,119) = 1.03, p = .409]; ethnic group

(comparing white/Asian only due to *n* in other categories) [*t* (12.813) = .640, *p* = .534]; antenatal class attendance [*t* (116.70) = -.51, *p* = .614]; or birth plan use [*t* (114.69) = 2.18, *p* =.03]. A significant difference was found in the environment decisions made in women's birth plans by women from different clinics [F (3,119) = 9.056, *p* <.001]. Tukey's post hoc test showed that these differences lay between women from clinics A and D (*p* = .004), B and C (*p* = .001), and clinics C and D (*p* <.001). The means in table 4.23 show that women from clinic A made more environment decisions than women from clinic D. Women from clinic C made more environment decisions than women from both clinics B and D.

Section 4.2.10 - Associations with support decisions. Decisions about support in labour and delivery were examined in relation to the subscales and age, general health status, health knowledge and birth expectancies.

Decisions about support in labour and delivery were positively associated with the Change the Situation coping style and negatively correlated with the Devaluation coping style. Thus women who use Change the Situation as a coping style make more decisions about support in childbirth and women who use Devaluation as a coping style make less. Support decisions were also positively correlated with the Family subscale, suggesting that women who feel most supported by their family make more decisions regarding support in childbirth.

Table 4.25

Associations between the number of support decisions in birth plans and continuous data variables (N=120).

Variable	*r*	*p*
Age	.007	.944
Medical conditions	-.015	.872
General health status	.173	.058
Health knowledge	.020	.828
Sufficient information	.004	.968
Where to find information	.010	.916
Asking midwife questions	-.105	.252
Positive Attitude towards Doctors	-.044	.631
Internal Health Locus of Control	.113	.219
Powerful others Health Locus of Control	.127	.167
Change the situation	.246	.007
Accommodation	.210	.021
Devaluation	-.269	.003
Avoidance	-.227	.013
Significant other	.140	.127
Family	.307	.001
Friends	-.172	061
Internal pain control	-.070	.449
Powerful Doctors pain control	-.021	.821
Birth expectancies	-.045	.624
Outcome-total	-.038	.682
Efficacy-total	-.067	.468

Section 4.2.11 – Differences in support decisions. Differences in the number of support decisions made in birth plans were further analysed in terms of a range of demographic and health behavioural variables.

Table 4.26

Means and standard deviations of number of support decisions in birth plans for parity, occupation, ethnic group, antenatal class attendance, use of birth plans and clinic attended.

Variable		Mean	S.D.
Parity	Primiparous	0.55	0.50
	Multiparous	0.58	0.50
Occupation	Unemployed	0.50	0.71
	Student	0.91	0.30
	Home-maker	0.67	0.49
	Unskilled worker	0.55	0.52
	Skilled worker	1.00	0.00
	White collar worker	0.44	0.50
	Professional	0.50	0.51
Ethnic group	White / white British	0.53	0.50
	Asian / Asian British	0.64	0.51
	Mixed	1.00	0.00
	Other	1.00	0.00
Antenatal class	Attender	0.53	0.50
	Non-attender	0.62	0.49
Birth plan	User	0.60	0.49
	Non-user	0.52	0.51
Clinic attended	A	0.65	0.49
	B	0.52	0.51
	C	1.00	0.00
	D	0.47	0.50

Comparison of the mean number of support decisions in birth plans between each group in these variables showed no significant difference at $p < .01$ in: Parity [t (114.97) = .306, p = .76]; occupation [F (6,119) = 2.321, p = .038]; ethnic group (comparing white/Asian only due to n in other categories) [t (12.278) = -.664, p = .519]; antenatal class attendance [t (99.84) = -.89, p = .374]; birth plan use [t (108.59) = .91, p = .365]; or clinic attended [F (3,119) = 2.697, p = .049].

Section 4.2.12 - Associations with medical decisions. Medical decisions in labour and delivery were examined in relation to the subscales and age, general health status, health knowledge and birth expectancies.

Table 4.27

Associations between the number of medical decisions in birth plans and continuous data variables (N=120).

Variable	*r*	*p*
Age	-.004	.969
Medical conditions	.311	.001
General health status	.105	.252
Health knowledge	-.120	.192
Sufficient information	-.074	.423
Where to find information	-.144	.116
Asking midwife questions	.036	.694
Positive Attitude towards Doctors	-.371	.001 (<)
Internal Health Locus of Control	.000	.997
Powerful others Health Locus of Control	-.349	.001 (<)
Change the situation	.305	.001
Accommodation	.170	.064
Devaluation	-.064	.484
Avoidance	-.121	.189
Significant other	-.152	.097
Family	-.220	.016
Friends	-.028	.764
Internal pain control	-.065	.480
Powerful Doctors pain control	.045	.626
Birth expectancies	-.297	.001
Outcome-total	.059	.520
Efficacy-total	-.315	.001 (<)

Medical decisions in women's birth plans were positively correlated with the number of existing medical conditions women had and with the Change the Situation coping style. Medical decisions were also negatively correlated with: Positive Attitudes

towards Doctors; Powerful others control; birth expectancies; and childbirth self-efficacy.

Section 4.2.13 – Differences in medical decisions. Differences in the number of medical decisions made in birth plans were further analysed in terms of a range of demographic and health behavioural variables.

Table 4.28

Means and standard deviations of number of medical decisions in birth plans for parity, occupation, ethnic group, antenatal class attendance, use of birth plans and clinic attended.

Variable		Mean	S.D.
Parity	Primiparous	0.68	0.94
	Multiparous	0.47	0.63
Occupation	Unemployed	1.00	1.41
	Student	0.00	0.00
	Home-maker	0.06	0.24
	Unskilled worker	0.46	0.69
	Skilled worker	1.00	0.00
	White collar worker	0.73	0.74
	Professional	0.84	1.08
Ethnic group	White / white British	0.62	0.83
	Asian / Asian British	0.46	0.52
	Mixed	0.00	0.00
	Other	0.00	0.00
Antenatal class	Attender	0.67	0.93
	Non-attender	0.45	0.58
Birth plan	User	0.60	0.74
	Non-user	0.56	0.92
Clinic attended	A	0.39	0.50
	B	0.70	1.02
	C	1.71	0.49
	D	0.34	0.48

Medical decisions were significantly different between the occupational groups [F(6,119) = 3.78, p <.01]. However, although the overall significance level exceeded the .01 level, Tukey's post hoc tests revealed that none of the occupational groups achieved this level of significance independently.

Women from different antenatal clinics made significantly different numbers of medical decisions in their birth plans [F (3,119) = 7.364, *p* <.001]. Tukey's post hoc test and examination of the means found that women from clinic C made significantly more medical decisions than women from clinic A (*p* <.001), clinic B (*p* =.007) and clinic D (*p* <.001).

No other significant differences were identified in the number of medical decisions women made in their birth plans between: Parity [*t* (112.84) = -1.42, *p* = .160]; ethnic group (comparing white/Asian only due to *n* in other categories) [*t* (16.139) = .930, *p* = .366]; antenatal class attendance [*t* (117.946) = 1.63, *p* = .107]; or birth plan use [*t* (95.94) = 0.29, *p* = .771].

Section 4.2.14 – Summary of variables related to the decisions in birth plans. Women who included the highest number of decisions in their birth plans scored higher on the Change the Situation and Accommodation subscales and scored lower on childbirth outcome expectations. Women from different clinics also made different numbers of decisions in their birth plans.

Table 4.29 shows the variables related to each type of decision in the birth plans. Decisions about positions and medical decisions had the most variables significantly related to them. The Change the Situation variable was positively correlated with four of the five decision types. Other variables, such as Positive Attitudes towards Doctors and Powerful others control, were positively correlated with some decision types and negatively correlated with others. The position decisions were positively correlated with all the variables they were significantly associated with, whereas the medical decisions tended to be negatively correlated with associated variables. The only exceptions to this were the extent of existing medical conditions and Change the Situation. Women with more existing medical conditions might be expected to make more medical decisions in their birth plans. However, the Change the Situation variable seems to represent a deviation from the general pattern of these results.

Table 4.29

The five decision types identified in the birth plans and the variables that were significantly related to them.

Decision type	Pain control	Position	Environment	Support	Medical
Variables		Change the situation (+)	Change the situation (+)	Change the situation (+)	Change the situation (+)
		Positive Attitudes towards Doctors (+)	Positive Attitudes towards Doctors (+)		Positive Attitudes towards Doctors (-)
		Powerful Doctors pain control (+)	Powerful Doctors pain control (+)		
		Family (+)		Family (+)	
		Birth expectancies (+)			Birth expectancies (-)
		Powerful others control (+)			Powerful others control (-)
		Accommodation (+)			
	Devaluation (+)			Devaluation (-)	
	Childbirth self-efficacy (-)				Childbirth self-efficacy (-)
		General health (+)			Medical conditions (+)
		Primiparous Students Clinic B	Clinics A & C		Clinic C

Chapter 5 – Descriptive statistics from the pregnant sample at post-natal (T2) testing

This chapter explores the data from the pregnant women at the post-natal testing point (T2). Sections 5.1 – 5.8 present patterns of distribution across the single item measures devised for the purposes of the current study. Sections 5.9 to 5.14 then examine patterns of distribution across all interval scales, and the reliability of the data are tested on items and subscales from: the Attitudes towards Doctors and Medicines Scale (ADMS) (Marteau, 1990); the Multidimensional Health Locus of Control scale (Form A) (MHLC) (Wallston et al., 1978); the Cybernetic Coping Scale (CCS) short (15-item) version (Guppy et al., 2004); the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988); the Beliefs about Pain Control Questionnaire (BPCQ) (Skevington, 1990); and the Edinburgh Postnatal Depression Scale (EPDS) (Cox et al., 1987). Section 5.15 examines the inter-rater reliability of the coding of the birth story data. Values throughout the analyses have been rounded up to two decimal places.

Section 5.1 – Birth experience

Women's postnatal assessment of their birth experience was measured on a scale of 1 (very negative) to 5 (very positive). The mean score on this item was 3.58±1.15 with a full range of responses from 1-5. Data was negatively skewed (-0.78) but within acceptable limits for normal distribution and was generally mesokurtic (-0.24). Examination of a box plot identified three outliers at the lower end of the scale who scored 1. However, as this was already only one point below the next lowest score no adjustments were required.

Section 5.2 – Usefulness of birth plan

Women were asked to rate the usefulness of their birth plan (where they used one) on a scale of 1 (completely useless) to 4 (very useful). The mean score on this item was 1.68±1.30 with a full range of responses from 1-4, meaning that the average estimate of birth plan usefulness lay between 'completely useless' and 'somewhat useless' for these women. The data was not skewed (0.23) but was platykurtic (-1.15). Box plot analysis identified no extreme scores.

Section 5.3 – Birth plan adherence

Women were then asked to rate how much they felt their birth plan was adhered to on a scale of 1 (completely ignored) to 4 (very much adhered to). The mean score on this item was 1.91±1.50 with a full range of responses from 1-4, meaning that the average estimate of birth plan adherence lay just short of 'somewhat ignored' for these women. The data was not skewed (-0.02) but again was platykurtic (-1.54). No extreme scores were identified in the box plot analysis for this item.

Section 5.4 – General health status

Women were asked to rate their general health status on a scale of 1 – 10 where 1 = very poor and 10 = excellent. The mean score on this item was 8.39±1.02, indicating that women in this sample assessed their general postnatal health very positively. The data was slightly negatively skewed (-0.51) and lepokurtic (0.44) but both values were within acceptable limits to assume normal distribution. Scores ranged from 6-10, with four scores of 6 being identified as extreme scores in a box plot. However, as these were only one below the lower bound of the box plot no adjustments were required.

Section 5.5 – Health knowledge

Women were asked to rate their health knowledge postnatally on a scale of 1 – 10 where 1 = very poor and 10 = excellent. The mean score on this item was 8.41±0.63 with a range of responses from 7-10, indicating that women in this sample assessed their postnatal health knowledge very positively. The data was positively skewed (0.87) but within acceptable limits and generally mesokurtic (0.29). No extreme scores were identified in a box plot.

Section 5.6 – Sufficient information

Women were asked to what extent they concurred with the statement: 'I was given sufficient information to make informed choices about my labour and delivery'. The five response options ranged from 1 (strongly disagree) to 5 (strongly agree). The mean score on this item was 4.40±0.62 with a range of responses from 3-5, indicating that women's responses lay on average between agree and strongly agree on this item. The data was not greatly skewed (-0.39) and was moderately platykurtic (-0.64) but within acceptable limits. No extreme scores were identified in a box plot.

Section 5.7 – Finding information

Women were asked to what extent they concurred with the statement: 'I know where and how to find the information I need to help me to care for my baby'. The five response options ranged from 1 (strongly disagree) to 5 (strongly agree). The mean score on this item was 4.48±0.50, indicating that women's responses lay on average between agree and strongly agree on this item. The data was not skewed (0.10) but had a very negative kurtosis value (-2.02). This was because scores on this item only ranged from 4 to 5.

Section 5.8 – Asking the health visitor questions

Women were asked to what extent they concurred with the statement: 'I feel able to ask questions when I see my health visitor'. The five response options ranged from 1 (strongly disagree) to 5 (strongly agree). The mean score on this item was 4.67±0.47 with a limited range of responses from 4-5, indicating that women's responses lay on average between agree and strongly agree on this item. Negative skewness (-0.72) and kurtosis (-1.51) values arose from the limited range of actual responses given.

Section 5.9 – The Attitudes towards Doctors and Medicines Scale (ADMS)

The descriptive statistics and reliability values using Cronbach's Alpha for the Positive Attitudes towards Doctors (PAD) and the Positive Attitudes towards Medicines (PAM) subscales are presented in Table 5.1. The higher the scores on the ADMS the more positive the attitudes towards doctors and medicine.

Table 5.1 shows that the mean scores and standard deviations on both subscales of the ADMS were higher than in Marteau's (1990) original study, with a greater difference in the PAD subscale on both means and standard deviations. Skewness and kurtosis values were within acceptable limits for both sub-scales and Cronbach's alpha showed a greater level of reliability in this data on both sub-scales than Marteau (1990) found. Examination of box plots for T2 data on the PAD and PAM subscales showed no outliers with responses ranging from 4-22 (PAD) and 9-22 (PAM).

Table 5.1

Descriptive statistics and reliability for the PAD and PAM subscales of the ADMS.

Statistic	PAD		PAM	
	Current study	Marteau (1990)	Current study	Marteau (1990)
Mean	14.53	12.3	14.74	14.3
Standard deviation	5.39	3.8	3.68	3.5
Skewness	-.67	-	-.15	-
Kurtosis	-.62	-	-.50	-
Alpha	.94	.76	.75	.67

Section 5.10 – The Multidimensional Health Locus of Control scale (MHLC)

The descriptive statistics and reliability values using Cronbach's alpha for the Multidimensional Health Locus of Control subscales are presented in table 5.2. The higher the scores on the MHLC the greater the locus of control is perceived to be either internal or external (i.e. in powerful others).

Table 5.2

Descriptive statistics and reliability for the Internal control (IHLC) and Powerful Others control (PHLC) subscales of the MHLC (Form A) scale.

Statistic	IHLC		PHLC	
	Current study	Wallston et al. (1978)	Current study	Wallston et al. (1978)
Mean	23.72	25.10	17.50	19.99
Standard deviation	3.96	4.89	5.87	5.22
Skewness	0.55	-	0.11	-
Kurtosis	0.77	-	-0.95	-
Alpha	.77	.77	.85	.67

Table 5.2 shows that the mean scores on both subscales of the MHLC scale were lower than in Wallston et al.'s (1978) original study. Skewness and kurtosis values

were mostly within acceptable limits for both subscales however the PHLC subscale appeared to be rather platykurtic. Cronbach's alpha showed an equal reliability value for the IHLC and a greater value for the PHLC in this data than Wallston et al. (1978) found. Examination of box plots for T2 data on the IHLC and PHLC subscales showed no outliers with responses ranging from 17-35 (IHLC) and 9-28 (PHLC).

Section 5.11 – The Cybernetic Coping Scale (CCS) - short (15 item) version

The descriptive statistics and reliability values using Cronbach's alpha for the Cybernetic Coping Scale subscales are presented in table 5.3. The higher the scores on the CCS subscales the greater the tendency to adopt each coping form.

Table 5.3 shows that the mean scores on all subscales of the CCS short (15 item) version were higher than in Guppy et al.'s (2004) original study. Skewness values were within acceptable limits for all subscales however all subscales were somewhat platykurtic, with three of the five subscales exceeding the acceptable limit of -1. Cronbach's alpha showed an improved reliability value for the Accommodation, Avoidance and Symptom reduction subscales than Guppy et al. (2004). The reliability coefficients for the Change the situation and Devaluation subscales were lower than obtained in Guppy et al. (2004) but still in excess of .07. Examination of box plots for T2 data on all subscales of the CCS short (15 item) version showed no outliers with responses ranging from 7-14 (C), 6-13 (Ac), 6-12 (D), 6-12 (Av), and 6-15 (S).

Table 5.3

Descriptive statistics and reliability for the Change the situation (C), Accommodation (Ac), Devaluation (D), Avoidance (Av) and Symptom reduction (S) subscales of the CCS short (15 item) version.

Statistic	C	Ac	D	Av	S
Mean - current study	10.84	9.18	9.36	9.28	10.28
Mean – Guppy et al. (2004)	8.25	8.0	7.2	6.8	10.03
Standard deviation – current study	1.95	2.24	1.64	2.08	2.46
Standard deviation – Guppy et al. (2004)	2.2	1.93	2.3	2.2	1.85
Skewness – current study	-0.02	-0.13	-0.11	-0.08	0.37
Kurtosis – current study	-1.11	-1.17	-.70	-1.16	-.60
Alpha – current study	.72	.87	.77	.92	.84
Alpha – Guppy et al. (2004)	.77	.69	.81	.74	.69

(Note: means and standard deviations for Guppy et al. (2004) are given as a mean value from all four studies reported in their original paper).

Section 5.12 – The Multidimensional Scale of Perceived Social Support (MSPSS)

The descriptive statistics and reliability values using Cronbach's alpha for the Multidimensional Scale of Perceived Social Support subscales are presented in table 5.4. The higher the scores on the MSPSS the more social support is perceived to come from each source.

Table 5.4

Descriptive statistics and reliability for the Significant Other, Family and Friends subscales of the MSPSS.

Statistic	Significant Other	Family	Friends
Item mean – current study	6.55	6.31	5.67
Item mean – Zimet et al. (1988)	5.74	5.80	5.85
Item SD - current study	0.71	0.81	1.08
Item SD – Zimet et al. (1988)	1.25	1.12	0.94
Skewness – current study	-1.24	-1.22	-0.53
Kurtosis – current study	-0.11	0.89	-0.52
Alpha – current study	.96	.89	.93
Alpha – Zimet et al (1988)	.91	.87	.85

Note: Item means are given for comparability with Zimet et al.'s data.

Table 5.4 shows that the item means on the Significant Other and Family subscales of the MSPSS scale were higher than in Zimet et al.'s (1988) original study, whereas the reverse was true for the Friends subscale. Data was negatively skewed for the Significant Other and Family subscales, indicating bunching of scores at the higher end of the scale. Kurtosis values were within acceptable limits for all subscales though the Family subscale was lepokurtic, consistent with the positive skew. Cronbach's alpha showed a greater reliability value for all subscales in this data than Zimet et al. (1978) found. Examination of box plots for T2 data on the Significant Other, Family and Friends subscales showed no extreme scores with responses ranging from 20-28 (Significant Other), 16-29 (Family) and 13-28 (Friends).

Section 5.13 – The Beliefs about Pain Control Questionnaire (BPCQ)

The descriptive statistics and reliability values using Cronbach's alpha for the Beliefs about Pain Control subscales are presented in table 5.5. The higher the scores on the BPCQ the more pain control is perceived to be located either internally or in powerful doctors.

Table 5.5

Descriptive statistics and reliability for the Internal and Powerful Doctors pain control subscales of the BPCQ

Statistic	Internal	Powerful Doctors
Mean – current study	14.65	12.21
Mean – Skevington (1990) total sample	15.57	13.00
Mean – Skevington (1990) undergraduates	15.29	11.24
Mean – Skevington (1990) university applicants	15.64	10.76
SD – current study	3.92	4.70
SD – Skevington (1990) total sample	4.86	4.79
SD – Skevington (1990) undergraduates	3.89	3.00
SD – Skevington (1990) university applicants	3.82	3.29
Skewness	-0.84	0.45
Kurtosis	0.62	-0.13
Alpha – current study	.79	.95
Alpha – Skevington (1990)	.73	.82

Table 5.5 shows that the means on the Internal subscale of the BPCQ scale were lower than in Skevington's (1990) sample. The Powerful Doctors subscale showed a lower mean than Skevington's (1990) total sample but higher than the healthy participant groups within that sample. This indicates that post-natal women rate doctors as more powerful in pain control than other healthy participants, but lower than cancer and chronic pain patients. Data was negatively skewed for the Internal subscale, with a lepokurtic distribution. In addition, some extreme scores were identified in the data on examination of a box plot. These scores were adjusted to the next lowest value beyond the lower bound of the box plot – 7. The Powerful Doctors

subscale produced skewness and kurtosis values that were both within acceptable limits and no extreme scores were identified in a box plot with ranges from 5-21 (Internal) and 4-22 (Powerful Doctors). Cronbach's alpha showed a greater reliability value for both subscales in this data than Skevington (1990) found.

Section 5.14 – The Edinburgh Postnatal Depression Scale (EPDS)

The Edinburgh Post-natal Depression Scale (Cox et al., 1987) produced a mean score of 6.43±3.20. Higher scores in the EPDS represent greater postnatal distress with the conventional cut-off score for possible post-natal depression at 12/13 (Cox et al., 1987). Ten of the 120 participants in this sample scored 12 or over, with a range of 1 – 14. Skewness (0.12) and Kurtosis (-0.38) levels suggested a broadly normal distribution and no outliers were identified in a box plot. Cronbach's alpha produced a reliability coefficient of .72.

Section 5.15 – Establishing reliability of birth story coding

A coding scheme for the content analysis of the birth stories was established (see Appendix J) and the valence of each event in the story was coded as either positive, negative or neutral. The total number of words in each story was then counted and the percentage of positive and negative statements represented in each story was calculated for later analysis. Inter-rater reliability was established by a second coder analysing a sample of 20 of these birth stories (>20%).

Each sentence of every birth story was treated as an event. The category to which each coder had assigned events was compared in an online table for calculating Cohen's Kappa (www.graphpad.com/quickcalcs/Kappa2.cfm). The resulting matrix is shown in table 5.6.

The total number of observed agreements in table 5.6 is 383 (95.51% of the observations). The number of agreements expected by chance is 183 (45.64% of the observations). The Kappa value of these agreements was 0.92. The standard error of Kappa was 0.02, with 95% confidence intervals from 0.88 – 0.95. Therefore the strength of agreement between the first and second raters was 'very good'. This gave a good indication that the birth stories were coded reliably and could be used in further analysis.

Table 5.6

Inter-rater agreement for valence in birth stories

Category	Positive	Negative	Neutral	Total
Positive	196	1	11	208
Negative	0	176	3	179
Neutral	2	1	11	14
Total	198	178	25	401

Section 5.16 – Summary of Chapter 5

The treatment of the T2 data presented in this chapter indicates that it has broadly normal distribution patterns. Extreme scores have been moderated where necessary and a good level of reliability has been established. Therefore it was considered appropriate to continue to analyse this data using parametric tests. This analysis is presented in Chapter 6.

Chapter 6 – Analysis of post-natal (T2) data

This chapter addresses the second research question: 'What are the post-natal psychological outcomes for women based upon social, health and psychological factors, and the existence, nature, complexity and evaluation of birth plans?' The key outcome measures were the scores on the EPDS, birth experience scores, the difference between birth expectancy scores and birth experience scores, and the valence of the birth stories. The number of positive and negative statements in each birth story was adjusted for the overall length of the story by converting the statements to percentages. These outcomes were measured against the demographic data, the single item measures and the subscales from the standardised scales. Finally, regression analyses were performed on the outcome measures to identify significant predictors of each. Again, the alpha level was set at .01 to take into account the power of the sample. The number of variables under consideration, particularly in the regression analyses, meant that the sample was just adequate. In order to make safer interpretations from the results though, the likelihood of them having been obtained by chance should be lower. Therefore a 1 in 100 chance of error was selected as more conservative than 1 in 20.

Section 6.1 – Age and outcomes

The age of the participants was correlated with EPDS scores, birth experience ratings, birth expectancy/birth experience differences, the percentage of positive statements in the birth stories and the percentage of negative statements in the birth stories. Age was moderately positively correlated with birth experience ratings [r = .54, p<.001] suggesting that older women rated their birth experience as more positive than younger women. The difference between birth expectancies and birth experience was also moderately positively correlated with age [r = .42, p<.001] suggesting that older women's birth experiences were more positive than they were expecting. No significant relationships were identified at p<.01 between age and: EPDS scores (r =.-23, p =.02); positive statements in birth stories (r = .18, p =.05); or negative statements in birth stories (r = -.09, p =.32).

Section 6.2 – Parity and outcomes

The parity of the women in this sample was considered in terms of each of the five outcome measures. The means and standard deviations of primiparous and multiparous women on these outcome measures were compared.

Table 6.1

Means and standard deviations of primiparous and multiparous women on each of the five outcome measures

Outcome measure	Primiparous		Multiparous	
	Mean	S.D.	Mean	S.D.
EPDS	6.89	3.79	5.89	2.24
Birth experience	3.40	1.07	3.80	1.21
Difference	-0.47	1.41	-0.24	1.47
Positive stories	9.26	5.01	9.13	6.35
Negative stories	11.42	2.69	6.42	4.53

Comparisons between the primiparous and multiparous women in this sample on the outcome measures identified a significant difference in the percentage of negative statements in the birth story. Primiparous women's birth stories contained a higher mean of negative statements than did multiparous women's birth stories. This difference was found to be significant [$t(11) = -7.48$, $p<.001$, $d = 1.39$]. No other significant differences were identified in parity and: EPDS scores (where homogeneity of scores could not be verified) [$t\ (106.29) = -1.79$, $p = .08$]; birth experience [$t\ (11) = 1.92$, $p = .06$]; the difference between birth expectancies and birth experience [$t\ (11) = .86$, $p = .39$]; or positive statements in birth stories [$t\ (11) = -.13$, $p = .90$].

Section 6.3 – Occupation and outcomes

The seven different occupational groups were ranked on their scores on: birth experience; expectancy/experience difference; positive birth story statements; negative birth story statements; and EPDS scores. These rank positions were then

summed by occupation and divided by the five outcome measures. This gave an overall impression of the position of each occupation group across the outcome measures. White collar workers emerged as the highest ranked occupation, thereby having the most positive overall birth outcomes by these measures. These were followed by: Professionals; homemakers; unemployed; and unskilled workers. The lowest ranked professions were skilled workers and students jointly. These groups had the poorest post-natal psychological outcomes by these measures.

One-way ANOVA's examined the occupational status of women in the sample in terms of each of the outcome measures. Significant differences were identified in all but the EPDS scale.

Section 6.3.1 – Differences in birth experiences ratings by occupation.

The descriptive statistics for ratings of birth experiences by occupation are presented in table 6.2.

Table 6.2

Descriptive statistics for birth experience ratings by occupation

Occupation	Mean	Standard Deviation
Unemployed	3.0	1.41
Student	1.73	0.47
Home-maker	3.89	1.53
Unskilled worker	2.64	1.43
Skilled worker	3.80	0.45
White collar worker	4.15	0.62
Professional	3.66	0.65

According to table 6.2, white collar workers, home-makers and professionals rated their birth experiences the highest, whilst students and unskilled workers rated their birth experiences as negative experiences (where 1 = very negative, 5 = very positive and 3 = neither). A one-way ANOVA found a significant difference amongst these occupational groups [F (6,119) = 12.78, p <.001]. Tukey's Honestly Significant Difference was used post hoc to identify where the differences between the occupations groups occurred. Students rated their birth experiences significantly more negatively than: Home-makers (p<.001, d = 2.16); skilled workers (p<.005, d = 4.5); white collar workers (p<.001, d = 4.4); and professionals (p<.001, d = 3.45).

Unskilled workers rated their birth experiences significantly more negatively than: Home-makers (p<.01, d = 0.85); and white collar workers (p<.001, d = 1.47).

Section 6.3.2 – Differences in birth expectancy/birth experience ratings by occupation. The descriptive statistics for differences in birth expectancy and birth experience ratings by occupation are given in table 6.3.

Table 6.3

Descriptive statistics for birth expectancy/birth experience differences by occupation

Occupation	Mean	Standard Deviation
Unemployed	-0.50	2.12
Student	-2.55	0.82
Home-maker	-0.50	1.72
Unskilled worker	-1.64	1.91
Skilled worker	0.00	0.00
White collar worker	0.42	0.84
Professional	-0.13	0.78

Table 6.3 shows that for most occupational groups the experience of birth was rated more negatively than the expectations of birth. This was more the case for students and unskilled workers. White collar workers were the only occupational group whose experience of birth was more positive than their expectations. A one-way ANOVA found a significant difference in the birth expectancies/birth experience differences between occupational groups [F(6,111) = 12.57, p<.001]. Tukey's HSD identified these differences as being between students and: Home-makers (p<.001, d = 1.61); skilled workers (p<.005, d = 6.22); white collar workers (p<.001, d = 2.57); and professionals (p<.001, d = 3.03). Differences were also established between unskilled workers and: White collar workers (p<.001, d = 0.88); and professionals (p<.01, d = 1.19).

Section 6.3.3 – Differences in percent of positive statements in birth stories by occupation. The descriptive statistics for the percent of positive statements in birth stories are given in table 6.4.

Table 6.4

Descriptive statistics for the percent of positive statements in birth stories by occupation.

Occupation	Mean	Standard Deviation
Unemployed	6.16	0.38
Student	5.94	1.20
Home-maker	6.61	2.60
Unskilled worker	5.79	2.68
Skilled worker	0.80	1.79
White collar worker	5.32	2.49
Professional	6.88	2.12

Table 6.4 shows that on average the skilled workers made fewer positive statements in their birth stories than other occupations. A one-way ANOVA found a significant difference in these results [$F(6,119) = 5.76$, $p<.001$]. A Tukey's HSD identified these differences as being between skilled workers and: Students ($p<.005$, $d = 3.43$); home-makers ($p<.001$, $d = 2.64$); and unskilled workers ($p<.005$, $d = 2.49$). Differences were also found between skilled workers and: White collar workers ($p<.005$, $d = 2.11$); and professionals ($p<.001$, $d = 3.10$).

Section 6.3.4 – Differences in percent of negative statements in birth stories by occupation. The descriptive statistics for the percent of negative statements identified in the birth stories were calculated by occupation and are presented in table 6.5.

Table 6.5

Descriptive statistics for the percent of negative statements in birth stories by occupation

Occupation	Means	Standard Deviations
Unemployed	10.25	2.16
Student	6.37	0.80
Home-maker	6.38	3.90
Unskilled worker	6.08	3.56
Skilled worker	15.16	3.37
White collar worker	8.31	4.11
Professional	7.13	3.12

Table 6.5 shows that skilled workers and the unemployed participants included the most negative statements in their birth stories, with unskilled workers, students and home-makers using the least. A one-way ANOVA found a significant difference in these results [$F(6,119) = 5.76$, $p<.001$]. Tukey's HSD post hoc test found that this difference lay between the skilled workers and: Students ($p<.001$, $d = 4.21$); home-makers ($p<.001$, $d = 2.41$); unskilled workers ($p<.001$, $d = 2.62$); white collar workers ($p<.005$, $d = 1.83$); and professionals ($p<.001$, $d = 2.47$).

Section 6.3.5 – Differences in EPDS scores by occupation. The descriptive statistics for the EPDS scores were calculated by occupation and are presented in table 6.6.

Table 6.6

Descriptive statistics for EPDS scores by occupation

Occupation	Means	Standard Deviations
Unemployed	6.00	2.83
Student	7.46	0.93
Home-maker	6.50	2.81
Unskilled worker	7.27	2.69
Skilled worker	7.60	1.34
White collar worker	5.93	4.12
Professional	6.25	2.97

Table 6.6 shows that mean EPDS scores across the different occupational groups were similar. A one-way ANOVA confirmed that there were no significant differences between the occupational groups on EPDS scores [$F(6,119) = 0.61$, $p = .73$].

Section 6.4 – Ethnicity and outcomes

There were very few participants in some of the ethnic groups, which made any meaningful analysis by these groups problematic. Therefore the black, Asian, mixed and other ethnic groups were combined to increase the numbers and compared with the white respondents in the sample. The descriptive statistics for each of the outcome measures by ethnic group are presented in table 6.7

Table 6.7

Descriptive statistics for ethnic groups on each of the five outcome measures

Outcome measure	White / White British		Other ethnic groups	
	Mean	S.D.	Mean	S.D.
EPDS	6.44	3.42	6.37	1.92
Experience	3.70	1.05	2.95	1.47
Difference	-.25	1.33	-.95	1.84
Positive stories	5.94	2.45	5.27	3.15
Negative stories	7.51	3.80	8.44	4.53

T-tests were performed between the two ethnic groups on all outcome measures based upon the means in table 6.7. However, there were no significant differences identified between the two ethnic groups on: EPDS scores [t (43.27) = 0.13, p =.90]; experience [t (21.61) = 2.13, p =.05]; difference [t (21.74) = 1.57, p = .13]; positive stories [t (22.32) = 0.89, p = .39]; or negative stories [t (23.07) = -.84, p = .41]. Results reported in section 6.4 do not assume equal variances as Levene's test was significant for three out of the five outcome measures.

Section 6.5 – Ante-natal education and outcomes

Women who had attended or indicated their intention to attend antenatal classes during their pregnancy were compared with women who had not, or had not planned to attend antenatal classes on all of the outcome measures. The means and standard deviations for these two groups are presented in table 6.8.

One significant difference was found in the percentage of negative statements in women's birth stories. Women who had attended or expected to attend antenatal classes included a higher mean percentage of negative statements in their birth stories compared with the birth stories of women who had not planned to attend antenatal classes. This difference of on average more than four more negative statements in birth stories of antenatal class attenders was significantly higher [t (11) = 5.42, p<.001, d = 0.99]. No other significant differences were found between

antenatal class attenders and non-attenders on: EPDS scores (equal variances not assumed) [t (117.90) = 0.40, p = .69]; birth experience [t (11) = -.26, p = .80]; expectancies / experience difference [t (11) = 0.29, p = .77]; or positive birth stories [t (11) = -.58, p = .56].

Table 6.8

Descriptive statistics for women who attended antenatal classes and women who did not attend antenatal classes on each of the outcome measures

Outcome measure	Antenatal attenders		Antenatal non-attenders	
	Mean	S.D.	Mean	S.D.
EPDS	6.52	3.64	6.30	2.40
Experience	3.56	1.03	3.62	1.33
Difference	-.33	1.32	-.41	1.61
Positive stories	8.96	5.02	9.57	6.52
Negative stories	10.70	3.24	6.68	4.88

Section 6.6 – Birth plan use and outcomes

Women who identified themselves as birth planners were compared with women who did not consider themselves to have birth plans on all outcome measures. The means and standard deviations for these two groups are presented in table 6.9.

Of these outcome measures, significant differences were identified in the percentage of positive statements in the birth stories. Birth planners recorded a lower mean of positive statements compared with the birth stories of non-birth planners. This difference was found to be significant [t(11) = -3.14, p<.005, d = 0.57]. From these results, women who plan for birth include less positive statements in their birth stories than women who do not plan for birth. No other significant differences were identified between birth planners and non-birth planners in: EPDS scores [t (11) =

1.83, *p* = .07]; birth experience [*t* (11) = -2.40, *p* = .02]; expectancies / experience difference [*t* (11) = -1.23, *p* = .09]; or negative birth stories [*t* (11) = -.52, *p* = .60].

Table 6.9

Descriptive statistics for women who did have a birth plan and women who did not have a birth plan on all outcome measures

Outcome measure	Birth planners		Non birth planners	
	Mean	S.D.	Mean	S.D.
EPDS total	6.90	3.08	5.83	3.29
Experience	3.37	1.17	3.87	1.07
Difference	-.56	1.54	-.10	1.25
Positive stories	7.84	5.22	10.98	5.71
Negative stories	8.94	4.19	9.37	4.72

Section 6.7 – Existing medical conditions and outcomes

The existence and extent of medical conditions was examined in terms of all outcome measures. No relationship was identified between existing medical conditions and: EPDS scores (*r* = -.01, *p* = .89); birth experience rating (*r* = -.07, *p* = .44); birth expectancy / birth experience rating (*r* = -.09, *p* = .32) or the positive (*r* = -.02, *p* = .82) or negative (*r* = .09, *p* = .33) valence of birth stories.

Section 6.8 – Birth plan evaluation and outcomes

The usefulness of the birth plan was rated on a scale of 1 (completely useless) to 4 (very useful). Scores on this item were positively correlated with women's ratings of their birth experience (*r* = .39, *p*<.001) and with the difference between birth expectancy and birth experience ratings (*r* = .36, *p*<.001). This suggests that women who found their birth plan the most useful also positively rated their birth experience. Additionally, women whose birth experience was more positive than they had expected also rated their birth plan as more useful. Birth plan evaluation was not

related to: EPDS scores (r = .16, p = .08); positive birth stories (r = -.11, p = .25); or negative birth stories (r = .04, p = .66).

The extent to which women felt that their birth plan was adhered to was rated on a scale of 1 (completely ignored) to 4 (very much adhered to). No significant relationships for this item were identified with: EPDS scores (r = .05, p = .62); birth experience (r = .01, p = .90); birth expectancies / experience difference (r = .04, p = .69); positive birth stories (r = .002, p = .98); or negative birth stories (r = -.07, p = .46).

Section 6.9 – Information access and outcomes

Women were asked to what extent they agreed with the statement: 'I was given sufficient information to make informed choices about my labour and delivery' on a scale of 1 (strongly disagree) to 5 (strongly agree). Scores on this item were negatively correlated with women's rating of their birth experience (r = -.29, p = .001) and with the difference between birth expectancy and birth experience ratings (r = -.40, p<.001). This result suggests that women who felt they were given sufficient information rated their birth experience lower than their birth expectations. No other significant relationships were found between sufficiency of information and: EPDS scores (r = .05, p = .59); positive birth stories (r = .15, p = .11); or negative birth stories (r = -.14, p = .12).

Women were then asked to what extent they agreed with the statement: 'I know where and how to find the information I need to help me to care for my baby' on a scale of 1 (strongly disagree) to 5 (strongly agree). Scores on this item were negatively correlated with the percent of negative statements in birth stories (r = -.33, p<.001). This item was also positively correlated with the percent of positive statements in the birth stories (r = .33, p<.001). These results suggest that women who are very aware of how to access information on infant care rate their birth experiences lower than their birth expectancies. However, these women report more positive statements in their birth stories. No other significant relationships were found between this statement and: EPDS scores (r = -.20, p = .03); birth experience (r = -.12, p = .19); or birth expectancies / experience difference (r = -.19, p = .04).

Finally, women were asked to what extent they agreed with the statement: 'I feel able to ask questions when I see my health visitor' on a scale of 1 (strongly disagree) to 5 (strongly agree). Scores on this item were positively correlated with the percent of positive statements in the birth stories (r = .36, p<.001) and negatively correlated with the percent of negative statements in the birth stories (r = -.32, p <.001). These results suggest that women who felt most able to ask their health visitor questions included more positive and less negative statements in their birth stories. No other significant relationships were identified between this statement and: EPDS scores (r = -.07, p = .45); birth experience (r = -.04, p = .66); or birth expectancies / experience difference (r = -.10, p = .31).

Section 6.10 – General health status, health knowledge and outcomes

General health status and health knowledge were both measured on scales of 1 – 10. Women's ratings of their general health status was not significantly correlated with: EPDS scores (r = -.23, p = .01); birth experience (r = .14, p = .12); birth expectancies / experience difference (r = -.02, p .87); positive birth stories (r = .21, p = .02); or negative birth stories (r = -.23, p = .01). Women's ratings of their health knowledge was positively correlated with: their birth experience rating (r = .42, p<.001); the difference between their birth expectancies and birth experiences (r = .37, p<.001); and the percent of positive statements in their birth stories (r = .36, p<.001). These results suggest that women who consider their health knowledge to be good rated their birth experience as more positive than their birth expectancies. They also included more positive statements in their birth stories. Health knowledge was not significantly related to: EPDS scores (r = -.11, p = .25); or negative birth stories (r = -.21, p = .02).

Section 6.11 – Attitudes towards doctors and medicine and outcomes

The Positive Attitudes towards Doctors (PAD) subscale of the ADMS was positively correlated with scores on the EPDS (r = .26, p<.01) and the percent of negative statements in the birth stories (r = .38, p<.001). The PAD subscale was also negatively correlated with the percent of positive statements in the birth stories (r = -.37, p<.001). These results suggest that women who hold positive attitudes towards doctors scored higher on the EPDS and included more negative statements and fewer positive statements in their birth stories. No other significant relationships were

founds between the PAD subscale and: Birth experience (r = .09, p = .34); or birth expectancies / experience difference (r = .05, p = .63).The Positive Attitudes towards Medicine subscale was also positively correlated with scores on the EPDS (r = .31, p<.001). This also suggests that women who hold positive attitudes towards medicine scored higher on the EPDS. No other significant relationships were found between PAM scores and: Birth experience (r = .17, p = .07); birth expectancies / experience difference (r = .07, p = .47); positive birth stories (r = -.12, p = .19); or negative birth stories (r = -.08, p = .37).

Section 6.12 – Control and outcomes

The Internal control subscale of the MHCL (Form A) scale was positively correlated with women's birth experience ratings (r = .33, p<.001) and the differences between birth expectancy and birth experience ratings (r = .30, p<.005). These results suggest that women who score highly on internal control rate their birth experience more positively than their birth expectancies. No other significant relationships were found between Internal control and: EPDS scores (r = .01, p = .89); positive birth stories (r = -.16, p = .09); or negative birth stories (r = -.16, p = .09). The Powerful Others control subscale was negatively correlated with the percent of positive statements in the birth stories (r = -.32, p<.001), suggesting that women who scored highly on Powerful Others control included fewer positive statements in their birth stories. No other significant relationships were found between the Powerful Others control subscale and: EPDS scores (r = .15, p = .10); birth experience (r = -.06, p = .54); birth expectancies / experience difference (r = -.12, p = .20); or negative birth stories (r = .03, p = .73).

Section 6.13 – Coping styles and outcomes

The Change the Situation coping subscale of the CCS short (15 item) version was positively correlated with scores on the EPDS (r = .34, p<.001) and negatively correlated with birth experience ratings (r = -.50, p<.001) and rated differences between birth expectancies and birth experiences (r = -.37, p<.001). These results suggest that women who scored highly on the Change the Situation subscale also scored higher on the EPDS and rated their birth experience more negatively and worse than their birth expectations. No other significant relationships were found

between the Change the Situation subscale and: Positive birth stories (r = -.06, p = .51); or negative birth stories (r = .04, p = .64).

The Accommodation subscale of the CCS short (15 item) version was not significantly correlated with: EPDS scores (r = .12, p = .21); birth experience (r = -.06, p = .54); birth expectancies / experience difference (r = .03, p = .74); positive birth stories (r = .08, p = .40); or negative birth stories (r = -.18, p = .05).

The Devaluation subscale of the CCS short (15 item) version was not significantly correlated with: EPDS scores (r = .10, p = .27); birth experience (r = .08, p = .39); birth expectancies / experience difference (r = .13, p = .17); positive birth stories (r = -.05, p = .59); or negative birth stories (r = .07, p = .46).

The Avoidance subscale of the CCS short (15 item) version was positively correlated with the percent of positive statements in the birth stories (r = .35, p<.001), suggesting that women who scored higher on the Avoidance subscale included more positive statements in their birth stories. The Avoidance subscale was not significantly related to: EPDS scores (r = -.10, p = .29); birth experience (r = .15, p = .11); birth expectancies / experience difference (r = .16, p = .08); or negative birth stories (r = .01, p = .90).

The Symptom Reduction subscale of the CCS short (15 item) version was not significantly related with: EPDS scores (r = .22, p = .02); birth experience (r = .01, p = .89); birth expectancies / experience difference (r = .06, p = .54); positive birth stories (r = -.07, p = .44); or negative birth stories (r = -.06, p = .53).

Generally, then, the change the situation subscale was associated with more negative outcomes and the avoidance subscale was associated with more positive outcomes for these women.

Section 6.14 – Perceived social support and outcomes

The Significant Other subscale of the MSPSS was positively correlated with birth experience ratings (r = .43, p<.001), birth expectancies / birth experience rating differences (r = .34, p<.001), and the percent of positive statements in birth stories (r = .28, p<.005). These results suggest that higher scores on the Significant Other subscale were related to more positive outcomes for women. No other significant

relationships were found between the Significant Other subscale and: EPDS scores (r = -.21, p = .02); or negative birth stories (r = -.23, p = .01).

The Family subscale of the MSPSS was negatively correlated with scores on the EPDS (r = -.28, p<.01). This result suggests that women who scored higher on the Family subscale had lower EPDS scores. No other significant relationships were found between the Family subscale and: Birth experience (r = .14, p = .12); birth expectancies / experience difference (r = .06, p = .55); positive birth stories (r = .03, p = .75); or negative birth stories (r = -.06, p = .54).

The Friends subscale of the MSPSS was negatively correlated with birth expectancy / birth experience difference ratings (r = -.27, p<.005). This result suggests that women who scored higher on the Friends subscale rated their birth experiences lower than their expectations. No other significant relationships were found between the Friends subscale and: EPDS scores (r = -.11, p = .23); birth experience (r = -.22, p = .02); positive birth stories (r = -.08, p = .38); or negative birth stories (r = .06, p = .51).

Together, the subscales of the MSPSS suggest that higher scores on the Significant Other and Family subscales are associated with positive birth outcomes and higher scores on the Friends subscale are associated with more negative birth outcomes.

Section 6.15 – Beliefs about pain control and outcomes

The Internal pain subscale of the BPCQ was positively correlated with birth experience ratings (r = .44, p<.001) and with birth expectancy / birth experience rating differences (r = .35, p<.001). The Internal pain subscale was also negatively correlated with the percent of positive statements in the birth stories (r = -.41, p<.001). These results suggest that women who scored higher on the Internal pain subscale rated their birth experiences more positively than their birth expectations, yet included fewer positive statements in their birth story. No other significant relationships were found between Internal pain and: EPDS scores (r = .07, p = .42); or negative birth stories (r = .13, p = .16). The Powerful Doctors pain subscale of the BPCQ was not correlated with: EPDS scores (r = .03, p = .75); birth experience (r = -.04, p = .70); birth expectancies / experience difference (r = -.09, p = .36); positive birth stories (r = -.23, p = .01); or negative birth stories (r = .08, p = .37).

Section 6.16 – Birth plan decisions and outcomes

The total number of decisions in the birth plans was positively correlated with scores on the EPDS (r = .41, p<.001), suggesting that the more decisions women made about their birth, the more distress they experienced post-natally. The total number of decisions was not significantly correlated with: Birth experience (r = -.14, p = .13); Birth expectancies / experience difference (r = -.06, p = .55); positive birth stories (p = -.03, p = .72); or negative birth stories (r = .02, p = .82). The decisions were then broken down into types and correlated with the outcome measures.

Section 6.16.1 – Pain control decisions and outcomes. Decisions about pain control were negatively correlated with birth experience ratings (r = -.31, p = .001) and positively correlated with scores on the EPDS (r = .25, p =.005). These results suggest that more decisions about pain control are associated with poorer outcomes post-natally. Pain control decisions were not significantly correlated with: Birth expectancies / experience difference (r = -.19, p = .04); positive birth stories (r = .09, p = .33); or negative birth stories (r = -.09, p = .35).

Section 6.16.2 – Position decisions and outcomes. Decisions about positions for labour and delivery were negatively associated with birth experience ratings (r = -.24, p = .007) and with differences between birth expectancy and birth experience ratings (r = -.31, p = .001). These results suggest that more decisions about positions are also associated with poorer outcomes post-natally. Position decisions were not significantly correlated with: Positive birth stories (r = -.01, p = .88); negative birth stories (r = -.01, p = .89); or EPDS scores (r = .18, p = .05).

Section 6.16.3 – Environment decisions and outcomes. Decisions about birth environment were positively correlated with EPDS scores (r = .30, p = .001), suggesting poorer post-natal outcomes for women who make more environment decisions. Environment decisions were not significantly correlated with: Birth experience (r = -.02, p = .87); birth expectancies / experience difference (r = -.01, p = .90); positive birth stories (r = -.06, p = .49); or negative birth stories (r = .05, p =.58).

Section 6.16.4 – Support decisions and outcomes. Decisions about support in labour and delivery were not significantly correlated with: Birth experience (r = .02, p = .83); birth expectancies / experience difference (r = .05, p = .56); positive

birth stories (r = .09, p = .34); negative birth stories (r = -.20, p = .03); or EPDS scores (r = .18, p = .05).

Section 6.16.5 – Medical decisions and outcomes. Decisions about medical issues in labour and delivery were positively correlated with birth experience ratings (r = .26, p =.004) and with birth expectancies / birth experience rating differences (r = .33, p <.001). These results suggest that women who make the most medical decisions for childbirth have better birth experiences. However, further positive correlations were also identified between medical decisions and the percent of negative statements in the birth stories (r = .28, p = .002) and with scores on the EPDS (r = .32, p<.001). These results suggest that the birth stories themselves contained more negative statements than might be expected from women's birth experience ratings on the scale. Additionally, women's post-natal distress scores are higher if they made more medical decisions. Medical decisions were not significantly correlated with positive birth stories at the p < .01 level (r = -.22, p = .02).

Section 6.17 – Childbirth self-efficacy and outcomes

The two subscales from the CBSEI were correlated with the outcome measures. The Outcome-Total subscale was negatively correlated with the difference in birth expectancy and birth experience ratings (r = -.29, p = .001). The Outcome-Total refers to expectancy ratings for coping behaviours in both active and second stage labour. This result suggests that women who score highly on the Outcome-Total subscale have more negative differences between their actual birth expectancy and birth experience ratings. Outcome-Total was not significantly correlated with: Birth experience (r = -.20, p =.03); positive birth stories (r = -.04, p = .65); negative birth stories (r = .08, p = .41); or EPDS score (r = .04, p = .65). The Efficacy-Total subscale measures self-efficacy expectancies for both active and second-stage labour. Efficacy-Total was negatively correlated with the percent of negative statements in the birth stories (r = -.25, p = .006). Therefore women who had higher self-efficacy expectancies for labour and delivery included fewer negative statements in their birth stories. Efficacy-Total was not significantly correlated with: Birth experience (r = .08, p = .37); birth expectancies / experience difference (r = -.21, p = .02); positive birth stories (r = .16, p = .09); or EPDS scores (r = -.18, p = .05).

Section 6.18 – Summary of outcomes by variables

The overall positive or negative outcomes related to each variable discussed above are summarised in table 6.10.

Table 6.10

Variables associated with positive and negative post-natal outcomes

Outcome valence	Positive	Negative
Variable	Older	Lower occupational groups
	Multiparous	Antenatal attenders
	Higher occupational groups	Birth planners
	Women who valued their birth plans	Women who felt they had sufficient information
	Women who felt they could ask their health visitor questions	Women who knew how to access information
	Women with good health knowledge	Having positive attitudes towards doctors and medicine
	Women with internal health locus of control	Women with external health locus of control
	Women who used avoidance as a coping style	Women who used changing the situation as a coping style
	Women who perceived their social support as coming from family and significant others	Women who perceived social support as coming from their friends
	Women with high childbirth self-efficacy	Women with high outcome expectancies for childbirth
		Women who made more decisions for birth
		Women who made more pain control, position and environment decisions

Variables not listed in table 6.10 were not associated with positive or negative outcomes. However, the internal pain control and medical decisions variables were associated with both positive and negative outcomes.

Section 6.19 – Predictors of EPDS scores

The variables that were significantly correlated with the EPDS to an alpha level of p <.01 were: the PAD and PAM subscales of the ADMS; the Change the Situation subscale of the CCS short (15 item) version; the Family subscale of the MSPSS; the total number of decisions in the birth plan; the number of environment decisions in the birth plan; and the number of medical decisions in the birth plan. These seven variables were included in a simultaneous multiple regression using the enter method, in which the EPDS scores were the dependant variable. Correlations between these variables showed the strongest relationship at r = .73. Tabachnik and Fidell (2007) suggest that correlations above .7 might indicate a problem and are worth investigating further. However, this correlation was between the PAD and PAM subscales of the ADMS, which measures similar issues but with a slightly different focus (positive attitudes towards doctors and positive attitudes towards medicines). This, together with the facts that the correlation was only just above the .7 mark and that all other correlations were much lower, led to the decision that further investigation of this was not necessary. The model was found to be significant [F (7) = 19.34, p<.001] with the predictor variables explaining 51.9% of the variance in EPDS scores. Of the seven predictor variables, four of them were identified as significant predictors: PAM (β = .55, t = 5.27, p<.001); Change the Situation (β = .40, t = 5.27, p<.001); Family (β = -.49, t = -6.84, p<.001); and medical decisions (β = .30, t = 3.87, p<.001). The PAD subscale (β = -.10, t = -1.01, p = .32), total number of decisions (β = -.02, t = -0.18, p = .86) and number of environment decisions (β = .16, t = 1.61, p = .11) were not found to be significant predictors of EPDS scores.

Section 6.20 – Predictors of birth experience ratings

The variables that were significantly related to the birth experience ratings with an alpha level of p <.01 were: Age; occupation; usefulness of birth plan; having sufficient information; health knowledge; the Internal control subscale of the MHLC (Form A) scale; the change the situation subscale of the CCS short (15 item) version; the Significant Other subscale of the MSPSS; the Internal pain subscale of

the BPCQ; decisions about pain control in the birth plan, decisions about positions in the birth plan; and medical decisions in the birth plan. This meant that twelve independent variables could be entered into a multiple regression with birth experience as the dependant variable. Tabachnick and Fidell (2007) suggest a useful guide for establishing the number of IV's that can be entered into a simultaneous regression as: $N \geq 50 + 8m$ for testing the overall relationship. *M* represents the number of IV's, in this case twelve. Therefore 8 x 12 = 96 + 50 = 146. As *N* = 120 in this sample, twelve IV's were considered unacceptable, even whilst retaining an alpha level of <.01. In order to reduce the number of IV's, only variables with at least moderate strength correlations ($r \geq .4$, Dancy & Reidy, 2004) or large effect sizes ($d \geq 0.8$, Langdridge, 2004) were included in the regression. These adjustments left six IV's: Age; occupation; health knowledge; Change the Situation; Significant Other; and Internal pain. Correlations between all the variables showed the strongest relationship at $r = -.50$ (between age and change the situation) so multicollinearity was not considered to be a problem. The simultaneous multiple regression using the enter method identified a significant model [$F(6) = 28.16$, $p<.001$]. The predictor variables explained 57.8% of the variance in the birth expectancy ratings. Four of the six IV's were found to be significant predictors at the $p<.01$ level: health knowledge ($\beta = .24$, $t = 3.47$, $p<.005$); Change the Situation ($\beta = -.19$, $t = -2.70$, $p<.01$); Significant Other ($\beta = .27$, $t = 4.26$, $p<.001$); and Internal pain ($\beta = .35$, $t = 5.55$, $p<.001$). Whilst these were the strongest predictors, one other variable was significant at the $p<.05$ level: Occupation ($\beta = .17$, $t = 2.60$, $p = .011$); Age was not a significant predictor of birth experience ratings in this model ($\beta = .12$, $t = 1.52$, $p = .13$).

Section 6.21 – Predictors of differences in scores between birth expectancies and birth experiences

The variables that were significantly related to the differences in birth expectancy and birth experience ratings with an alpha level of $p <.01$ were: Age; occupation, usefulness of birth plan, having sufficient information, health knowledge, the Internal control subscale of the MHLC (Form A) scale; the Change the Situation subscale of the CCS short (15 item) version; the Significant Other subscale of the MSPSS; the Friends subscale of the MSPSS; the Internal pain subscale of the BPCQ; the number of position decisions in the birth plan; the number of medical decisions in the birth

plan; and the Outcome-Total subscale of the CBSEI. Therefore thirteen variables could potentially be entered into the regression analysis as IV's. Using Tabachnick and Fidell's (2007) guide as described in section 6.17, the minimum required number of participants for a multiple regression with thirteen IV's would be 154 for the overall relationship. This meant that with a sample of 120, the statistical power would be compromised here, even acknowledging that this formula is offered as a guide rather than as an absolute rule. Therefore in order to try to avoid making type 1 errors, only variables with the strongest correlations and largest effect sizes (as described in section 6.19) were included and an alpha level of <.01 was retained. This left three IV's: Age, occupation and having sufficient information. Correlations between all of the variables showed the strongest relationship at -.50 (between having sufficient information and occupation) so multicollinearity was not considered to be a problem. The simultaneous multiple regression using the enter method identified a significant model [F (3) = 20.95, p<.001]. The predictor variables explained 33.8% of the variance in the differences between birth expectancy and birth experience ratings. Two of the three IV's were found to be significant predictors at the p<.01 level: Age (β = .37, t = 4.33, p<.001); and having sufficient information (β = -.34, t = -3.89, p<.001). Occupation was not a significant predictor of birth expectancy / birth experience ratings in this model (β = .14, t = 1.38, p = .17). It was unfortunate that more of the variables could not have been included in this analysis, which might have achieved a stronger model. The possibility of lowering the inclusion minimum to $r \geq .3$ was considered but would have again led to too many IV's as the majority of the correlations were between .3 and .39.

Section 6.22 – Predictors of the percent of positive statements in birth stories

The variables that were significantly related to the percent of positive statements in the birth stories with an alpha level of p <.01 were: Occupation; birth plan use; knowing where to find information; being able to ask the health visitor questions; health knowledge; the PAD subscale of the ADMS; the Powerful Others subscale of the MHLC (Form A) scale; the Avoidance subscale of the CCS short (15 item) version; the Significant Other subscale of the MSPSS; and the Internal pain subscale of the BPCQ. This made ten IV's that could be entered into the regression. Ten was considered to be too many variables to include without risking overfitting and type 1 errors. The strength of the correlations between the variables and the percent of

positive statements in the birth plans were similar so no grounds for elimination of variables could be found on this basis. However, the difference between birth planners and non-birth planners was omitted on the basis that these were only two groups and could potentially compromise the model. Using Tabachnik and Fidell's (2007) formula, an N of 122 would be required with 9 IV's to test the overall relationship and an N of 113 to test individual pathways. The N of 120 in the current sample clearly fell slightly short of this so further caution was exercised and the occupation variable was also eliminated. Therefore the regression was performed with the remaining eight variables. Correlations between all of the variables showed the strongest relationship at r = .67 (between where to find information and being able to ask the health visitor questions) so multicollinearity was not considered to be a problem. The simultaneous multiple regression using the enter method identified a significant model [$F(8) = 18.20$, $p<.001$]. The predictor variables explained 54% of the variance in the percent of positive statements in the birth stories. Four of the eight IV's were found to be significant predictors at the <.01 level: Asking health visitor questions (β = .38, t = 3.87, $p<.001$); health knowledge (β = .38, t = 4.95, $p<.001$); PAD (β = -.75, t = -8.82, $p<.001$); and Powerful Others (β = .50, t = 3.81, $p<.001$). Knowing where to find information (β = -.06, t = - 0.64, p = .53), Avoidance (β = -.20, t = -2.54, p =.013), Significant Other (β = .15, t = 2.10, p =.04) and Internal pain (β = -.20, t = -2.22, p = .03) did not significantly predict the percent of positive statements included in the birth stories.

Section 6.23 – Predictors of the percent of negative statements in birth stories

The variables that were significantly correlated with the percent of negative statements in the birth stories at an alpha level of <.01 were: Occupation; parity; antenatal class attendance; knowing where to find information; being able to ask the health visitor questions; the PAD subscale of the ADMS; number of medical decisions in the birth plan; and Efficacy-Total. Correlations between all of the variables showed the strongest relationship at r = .67 (between where to find information and being able to ask the health visitor questions) so multicollinearity was not considered to be a problem. The simultaneous multiple regression using the enter method identified a significant model [$F(8) = 10.54$, $p<.001$]. The predictor variables explained 39% of the variance in the percent of negative statements in the birth stories. Three of the eight IV's were found to be significant predictors at the

p<.01 level: The number of medical decisions in the birth plan (β = -.24, *t* = -2.92, *p* = .004); being able to ask the health visitor questions (β = .28, *t* = 2.71, *p* = .008); and parity (β = -.52, *t* = -4.81, *p* <.001). The remaining five IV's did not significantly predict the percent of negative statements in the birth stories: PAD (β = .12, *t* = 1.51, *p* = .013); where to find information (β = -.23, *t* = - 1.88, *p* = .06); occupation (β = .11, *t* = 1.21, *p* = .23); antenatal class attendance (β = .10, *t* = 0.99, *p* = .33); efficacy-total (β = -.15, *t* = -1.72, *p* = .09).

Section 6.24 – Summary of the factors involved in the outcome measures

The extent to which each of the variables predicted the outcome measures was calculated and presented in table 6.11.

Table 6.11 shows the number of outcome measures each variable predicted. Four variables significantly predicted two outcome measures: Health knowledge; Change the Situation as a coping style; the number of medical decisions in the birth plans; and feeling able to ask the health visitor questions. The variables that did not predict any of the outcome measures were: Ethnicity; birth plan use; usefulness of birth plan; birth plan adherence; knowing where to find information; general health status; Internal control; Devaluation; Accommodation; Symptom Reduction; Friends; Powerful Doctors pain; decisions about pain control in birth plans; decisions about positions in birth plans; decisions about support in birth plans; and Outcome-Total.

Table 6.11

The outcome measures predicted by each of the variables (in Beta values – bold typeface indicates significance).

Variable	Outcome measure				
	EPDS	BExp	E/E Diff	PosS	NegS
Health Knowledge	---	**.24**	---	**.38**	---
PAD	-.10	---	---	**-.75**	.12
Significant other	---	**.27**	---	.15	---
Internal pain	---	**.35**	---	1.20	---
Change the situation	**.40**	**-.19**	---	---	---
Medical decisions	**.30**	---	---	---	**1.24**
Occupation	---	.17	.14	---	.11
Having sufficient information	---	---	**-.34**	---	---
Powerful others control	---	---	---	**.50**	---
Avoidance	---	---	---	-.20	---
Family	**-.49**	---	---	---	---
PAM	**.55**	---	---	---	---
Age	---	.12	**.37**	---	---
Asking health visitor questions	---	---	---	**.38**	**.28**
Total decisions	-.02	---	---	---	---
Environment decisions	.16	---	---	---	---
Where to find information	---	---	---	-.06	-.23
Parity	---	---	---	---	**.12**
Antenatal class attendance	---	---	---	---	.10
Efficacy-total	---	---	---	---	-.15

Note: BExp = birth experience ratings; E/E Diff = expectancy / experience difference; PosS = positive statements in birth stories; NegS = negative statements in birth stories; --- = not entered.

Chapter 7 - Distribution of comparison data

The distribution of the data from the sample of non-pregnant women was explored in preparation for comparison with the pregnant sample.

Section 7.1 - Age

The women in the comparison sample were aged between 18 and 50 with a mean age of 27.91 (±10.86). Ages were skewed towards the lower end of the range (0.92) due to the sample being recruited from a university campus and were platykurtic (-0.73). No extreme scores were identified from a box plot.

Section 7.2 – General health status and health knowledge

Table 7.1

Descriptive statistics for the general health status and health knowledge items

Variable	Mean (S.D.)	Skewness	Kurtosis
General health	7.71 (1.20)	-0.57	0.99
Health knowledge	7.16 (1.49)	-0.38	-0.04

Both health items were rated on a scale of 1 – 10. Data for general health was not greatly skewed but was lepokurtic with a peak at a score of 8. Several extreme scores were identified on a box plot. However, some of these were one score above the upper bound of the box plot and did not therefore require adjustment. Others were one score below the lower bound of the box plot and could also remain. One score was much lower than the rest (3). This was moved up to a 5 so that it also was only one score below the lower bound of the box plot. Skewness and kurtosis values for health knowledge were low, indicating that the scores were fairly normally distributed. One extreme score of 2 was identified on a box plot. This was moved up to a 3 to make it one score below the lower bound of the plot, ensuring it was still the lowest score but that it did not distort the mean and affect the inferential analysis.

Section 7.3 – The Attitudes towards Doctors and Medicines Scale (ADMS)

Table 7.2

Descriptive statistics and reliability for the ADMS

Variable	Mean (S.D.)	Skewness	Kurtosis	alpha
PAD	12.98 (3.79)	-0.10	-0.62	.79
PAM	14.69 (3.09)	-0.15	-0.15	.64

The Positive Attitudes towards Doctors subscale data was not skewed and was platykurtic within acceptable limits. No extreme scores were identified in a box plot and Cronbach's alpha produced a good reliability coefficient. The Positive Attitudes towards Medicines subscale data was quite normally distributed with low skewness and kurtosis values. A box plot identified one extreme score of 6, which was moved up to 7 to make it one below the lowest score within the lower bound of the box plot. Cronbach's alpha produced a slightly low reliability coefficient, which could only be improved to .65 with the removal of item 2.

Section 7.4 – The Multidimensional Health Locus of Control (Form A) scale (MHLC)

Table 7.3

Descriptive statistics and reliability for the MHLC scale (MHLC)

Variable	Mean (S.D.)	Skewness	Kurtosis	alpha
Internal control	22.87 (4.49)	-0.30	-0.19	.77
Powerful others control	16.41 (4.94)	0.08	-0.51	.80

The Internal control subscale data was not excessively skewed and was generally mesokurtic. No extreme scores were identified in a box plot and Cronbach's alpha produced a good reliability coefficient. The Powerful others subscale data was not skewed and was platykurtic within acceptable limits. No extreme scores were identified in a box plot and Cronbach's alpha produced a good reliability coefficient.

Section 7.5 – The Cybernetic Coping Scale short (15 item) version (CCS)

Table 7.4

Descriptive statistics and reliability for the CCS short (15 item) version

Variable	Mean (S.D.)	Skewness	Kurtosis	alpha
Change the situation	9.54 (1.99)	0.07	0.33	.72
Accommodation	9.49 (1.88)	-0.19	-0.15	.71
Devaluation	9.46 (2.47)	-0.07	0.57	.84
Avoidance	9.59 (2.29)	0.00	0.02	.79
Symptom reduction	10.64 (2.04)	-0.49	0.80	.72

Data for the subscales of the CCS short (15 item) version was not skewed and most were generally mesokurtic, apart from Symptom Reduction, which was lepokurtic but within acceptable limits. Reliability values were in excess of .7 for every subscale. No extreme scores were found for the Change the Situation and Accommodation subscales. Two low scores on the Devaluation subscale were moved to one point beyond the lower bound of the box plot to make them less extreme. One score was beyond the lower bound of the box plot for avoidance but was only one point away so did not require moving. One score on the Symptom Reduction subscale was moved up two places to one point beyond the lower bound of the box plot to make it less extreme.

Section 7.6 – The Multidimensional Scale of Perceived Social Support (MSPSS)

Table 7.5

Descriptive statistics and reliability for the MSPSS

Variable	Mean (S.D.)	Skewness	Kurtosis	alpha
Significant other	23.08 (4.86)	-1.28	2.12	.96
Family	21.67 (5.25)	-0.87	0.57	.92
Friends	22.81 (4.49)	-1.07	1.63	.95

The reliability coefficients of each sub-scale in the MSPSS were very strong. However, two of the subscales (Significant Other and Friends) were negatively skewed and lepokurtic. The majority of participants scored very highly on these two subscales. Each subscale had one or two extreme scores at the lower end of the scale but moving these would not have brought skewness and kurtosis values into acceptable limits. Therefore, as normal distribution could not be established for these three subscales, non-parametric data analysis was adopted for this scale in chapter 8.

Section 7.7 – The Beliefs about Pain Control Questionnaire (BPCQ)

Table 7.6

Descriptive statistics and reliability for the BPCQ

Variable	Mean (S.D.)	Skewness	Kurtosis	alpha
Internal pain	15.64 (4.41)	-0.43	-0.20	.82
Powerful Doctors pain	11.09 (3.73)	0.15	0.02	.80

Data from the two subscales of the BPCQ showed that the distribution was not overly skewed and was generally mesokurtic. Cronbach's alpha produced good levels of reliability. Box plots showed no extreme scores for Internal pain and one extreme score for Powerful Doctors pain. This outlier was moved one point down to make it one point beyond the upper bound of the box plot.

Section 7.8 – Summary of Chapter 7

The continuous data was checked for distribution and reliability. All scales produced acceptable levels of reliability. Most of the data scales produced data that was generally normally distributed and any extreme scores identified were modified appropriately. The data from the MSPSS deviated markedly from normal distribution, thereby violating the assumptions for parametric tests. For this reason non-parametric tests were adopted for all analyses involving this scale in chapter 8.

Chapter 8 – Comparison of data from the non-pregnant sample with data from the pregnant sample at T1 and T2

Data from the comparison sample was compared with data from the pregnant sample at both pre-natal (T1) and post-natal (T2) time points in order to address research question 3 (Do women score differently on the scales between pregnancy and the post-natal period and how does this compare with scores from non-pregnant women on the same scales?). This chapter presents the differences identified between the two samples and within the pregnant sample at both time points.

Section 8.1 – Demographic data

The ages, occupations and ethnicity of the two samples were compared in order to establish reasonable comparisons between the two groups on these variables.

Section 8.1.1 – Age. The mean age of the comparison group (27.91±10.86) was slightly lower than the mean age of the pregnant sample (29.10±5.71) but this difference was not statistically significant [t (216.88) = -1.123, p = .26] (not assuming equal variances).

Section 8.1.2 – Occupational group. The occupational group of women in the comparison and pregnant samples are shown in figure 8.1.

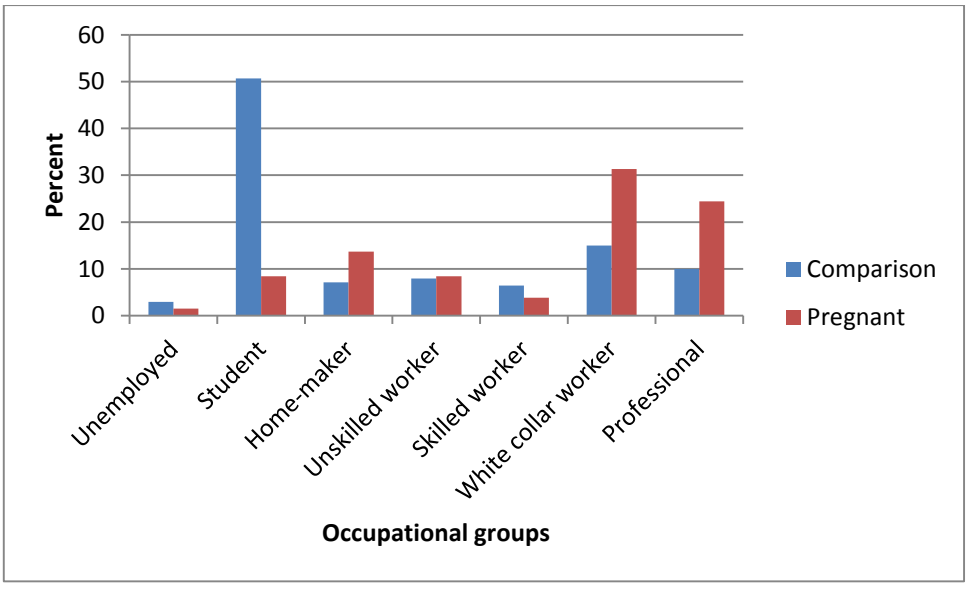

Figure 8.1 The occupational groups of women in the comparison and pregnant samples in percent.

Figure 8.1 shows that there were more students in the comparison sample and more white collar and professional women in the pregnant sample. Analysis of this data using a chi-square test showed no overall significant difference in occupational groups between the two samples [χ^2 (36) = 28.86, p = .80].

Section 8.1.3 – Ethnic group. The ethnic group of women in the comparison and pregnant samples are shown in figure 8.2.

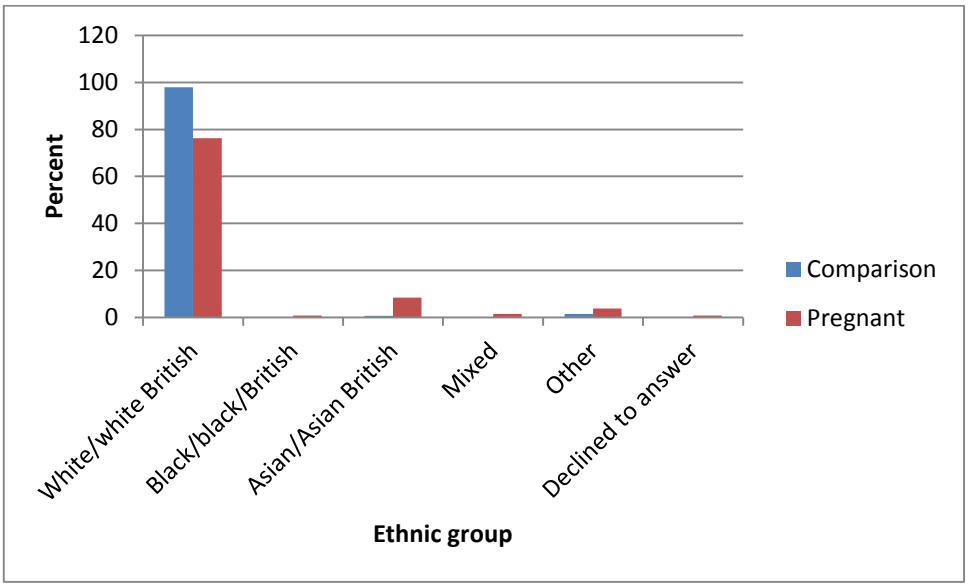

Figure 8.2 – The ethnic groups of women in the comparison and pregnant samples in percent.

Figure 8.2 shows that the majority of participants in both groups were white / white British, with some other ethnic groups being represented in the pregnant sample but less so in the comparison sample. Analysis of this data using a chi-square test was not possible due to the very low numbers of ethnic groups in several cells.

Section 8.2 – Single-item measures

The scores on the general health status question and the health knowledge question between the two samples and across both times points were compared. Table 8.1 shows the descriptive statistics for this data.

Table 8.1

Means (and standard deviations) for general health status and health knowledge between the comparison and pregnant samples and across pre- (T1) and post-natal (T2) time points.

Variable	Comparison group	T1	T2
General health status	7.73 (1.16)	8.52 (0.96)	8.39 (1.02)
Health Knowledge	7.16 (1.47)	8.03 (1.10)	8.41 (0.63)

Table 8.1 shows that participants self-ratings of their general health status was higher in the pregnant sample than in the comparison group and higher during pregnancy than post-natally. Differences in general health status between the comparison group and the pregnant sample at T1 were significant [$t(258) = -5.92$, $p<.001$, $d = 0.74$], as were differences between the comparison group and the pregnant sample at T2 [$t(258) = -4.88$, $p<.001$, $d = 0.60$]. Furthermore, within group differences in general health status were significant between T1 and T2 in the pregnant sample [$t(119) = -4.88$, $p<.001$, $d = 0.13$].

The means for health knowledge were also higher in the pregnant sample than in the comparison and women felt that their health knowledge was better post-natally than during pregnancy. Differences in health knowledge between the comparison group and the pregnant sample at T1 were significant [$t(253.43) = -5.40$, $p<.001$, $d = 0.67$], as were differences between the comparison group and the pregnant sample at T2 [$t(194.46) = -9.11$, $p<.001$, $d = 1.11$] (equal variances are not assumed in both cases). Furthermore, within group differences in health knowledge were significant between T1 and T2 in the pregnant sample [$t(119) = -8.64$, $p<.001$, $d = 0.42$].

Section 8.3 – The Attitudes towards Doctors and Medicines Scale (ADMS)

The scores on the Positive Attitudes towards Doctors (PAD) and the Positive Attitudes towards Medicines (PAM) subscales of the ADMS were compared between the two samples and across the two time points. Table 8.2 shows the descriptive statistics for this data.

Table 8.2

Means (and standard deviations) for the PAD and PAM subscales of the ADMS between the comparison and pregnant samples and across pre- (T1) and post-natal (T2) time points.

Variable	Comparison group	T1	T2
PAD	12.98 (3.79)	13.40 (3.88)	14.53 (5.39)
PAM	14.69 (3.07)	15.48 (2.23)	15.74 (3.68)

The PAD subscale means were higher in the pregnant sample than in the comparison sample and higher at T2 than T1. No significant difference in PAD scores was found between the comparison group and the pregnant group at T1 [t (258) = -.884, p = .38]. However, T2 scores were significantly higher than the comparison group [t(208.94) = -2.65, p<.01, d = 0.33] (not assuming equal variances). Within group differences in PAD scores were also significant between T1 and T2 in the pregnant sample [t(119) = -2.27, p<.05, d = 0.24].

The means on the PAM subscale also increased between the comparison and pregnant sample and across the two time points. Differences in PAM scores between the comparison group and the pregnant sample at T1 were significant [t(251.56) = -2.37, p<.05, d = 0.29] (not assuming equal variances), as they were for the comparison group and the pregnant sample at T2 [t(258) = -2.51, p<.05, d = 0.31]. Furthermore, within group differences in PAM scores were significant between T1 and T2 in the pregnant sample [t(119) = -2.14, p<.05, d = 0.09].

Section 8.4 – The Multidimensional Health Locus of Control (Form A) scale (MHLC)

The scores on the Internal control (I) and Powerful others control (P) subscales of the MHLC (Form A) scale were compared between the two samples and across the two time points. Table 8.3 below shows the descriptive statistics for this data.

Table 8.3

Means (and standard deviations) for the Internal (IHLC) and Powerful others (PHLC) subscales of the MHLC (Form A) scale between the comparison and pregnant samples and across pre- (T1) and post-natal (T2) time points.

Variable	Comparison group	T1	T2
Internal control	22.87 (4.49)	23.69 (2.96)	23.72 (3.96)
Powerful others control	16.41 (4.94)	15.79 (4.68)	17.50 (5.87)

The mean scores on the IHLC sub-scale are higher in the pregnant sample than the comparison group and higher post-natally than during pregnancy. Overall there were no significant differences between the two groups on the IHLC subscale. The comparison group compared with T1 testing of the pregnant sample showed equal variances could not be assumed [t (242.57) = -1.76, p = .08]. The comparison group compared with T2 testing of the pregnant sample was more evenly distributed [t (258) = -1.60, p = .11]. A within groups difference was found across the two time points [t(119) = -2.25, p<.05, d = 0.01].

The PHLC sub-scale produced the lowest mean scores during pregnancy and the highest post-natally, with the comparison group scoring between the two. No significant differences were found for the PHLC subscale between: The comparison group and T1 [t (258) = 1.04, p = .30]; the comparison group and T2 (not assuming equal variances) [t (233.59) = -1.60, p = .11]; or across time points [t (119) = -1.23, p = .221].

Section 8.5 – The Cybernetic Coping Scale short (15 item) version (CCS)

The scores on the Change the Situation, Accommodation, Devaluation, Avoidance, and Symptom Reduction subscales of the CCS short (15 item) version were compared between the two samples and across the two time points. Table 8.4 shows the descriptive statistics for this data.

Table 8.4

Means (and standard deviations) for the Change the Situation, Accommodation, Devaluation, Avoidance, and Symptom Reduction subscales of the CCS short (15 item) version between the comparison and pregnant samples and across pre- (T1) and post-natal (T2) time points.

Variable	Comparison group	T1	T2
Change the situation	9.57 (1.99)	10.27 (2.22)	10.84 (1.95)
Accommodation	9.49 (1.88)	9.18 (1.65)	9.18 (2.24)
Devaluation	9.49 (2.39)	8.81 (1.69)	9.36 (1.64)
Avoidance	9.59 (2.29)	8.49 (1.74)	9.28 (2.08)
Symptom reduction	10.65 (2.00)	10.03 (1.85)	10.28 (2.46)

The Change the Situation subscale of the CCS short (15 item) version produced higher means in the pregnant sample than in the comparison sample and higher at T2 than in T1. The difference in means between the two samples was significant [$t(258) = -2.70$, $p<.01$,$d = 0.33$] at T1. The comparison group also scored significantly different to the T2 scores from the pregnant sample [$t(258) = -5.18$, $p<.001$, $d = 0.65$]. Furthermore, there was a significant difference across the two time points in the pregnant sample [$t(119) = -5.68$, $p<.001$, $d = 0.27$].

The means for the Accommodation subscale of the CCS short (15 item) version were higher in the comparison sample than the pregnant sample and remained stable across the two time points. No significant differences were found between the comparison group and T1 [t (258) = 1.40, p = .16], the comparison group and T2 (not assuming equal variances) [t (233.17) = 1.23, p = .22] or across the time points [t (119) = 0.93, p = .353] for Accommodation.

The Devaluation subscale of the CCS short (15 item) version produced the highest means in the comparison sample and the lowest means at T1. These two data points were significantly different [$t(249.50) = 2.69$, $p<.01$, $d = 0.33$] (not assuming equal variances). There were no significant differences between the comparison sample

and T2 [t (246.69) = 0.54, p = .59] (not assuming equal variances), or between the two time points [t (119) = 0.13, p = .90].

The Avoidance subscale of the CCS short (15 item) version followed a similar pattern, with a significant difference emerging between the comparison group and scores at T1 in the pregnant group [t (254.56) = 4.36, p<.001, d = 0.54] (not assuming equal variances). No significant differences were found between the comparison group and T2 [t (258) = 1.11, p = .27] or across the two time points [t (119) = 1.03, p = .31].

Likewise, the scores on the Symptom Reduction subscale of the CCS short (15 item) version were significantly different between the comparison group and the pregnant group at T1 [t (258) = 2.60, p<.05, d = 0.32]. No significant differences were found between the comparison group and T2 [t (228.62) = 1.30, p = .19] (not assuming equal variances) or between the two time points [t (119) = 1.05, p = .30].

Overall for the CCS short (15 item) version, the Change the situation subscale produced the most variability in scores and the Accommodation subscale remained the most stable. The remaining subscale scores were lower during pregnancy then increased post-natally, though not to the level of the comparison group.

Section 8.6 – The Multidimensional Scale of Perceived Social Support (MSPSS)

The scores on the Significant Other, Family and Friends subscales of the MSPSS were compared between the two samples and across the two time points. Table 8.5 shows the descriptive statistics for this data.

Table 8.5

Means (and standard deviations) for the Significant Other, Family and Friends subscales of the MSPSS between the comparison and pregnant samples and across the pre- (T1) and post-natal (T2) time points.

Variable	Comparison group	T1	T2
Significant other	23.08 (4.86)	25.93 (3.03)	26.18 (2.82)
Family	21.67 (5.25)	24.91 (3.26)	25.25 (3.22)
Friends	22.81 (4.49)	22.64 (3.93)	22.67 (4.33)

The pregnant sample scored higher on the Significant Other and Family subscales than the comparison sample and higher at T2 than T1, indicating that partners and families are perceived as a source of social support during pregnancy and even more so post-natally. The Friends subscale was quite stable across time points in the pregnant sample and only slightly lower than the comparison group. For the comparison group the Friends subscale scored higher than the Family subscale but lower than the Significant Other subscale. However, for the pregnant sample, the Significant Other subscale was scored the highest while the Friends subscale scored the lowest.

The issues identified with the distribution of this data in Chapter 7 led to the decision to analyse this data using non-parametric tests. Mann-Whitney U tests showed significant differences on the Significant Other subscale between the comparison group and the pregnant group at T1 (U = 5,106.50, p<.001, Θ – 0.30) and at T2 (U = 4,861.00, p<.001, Θ = 0.29). Differences were also found between the groups on the Family subscale at T1 (U = 5,272.50, p<.001, Θ = 0.31) and T2 (U = 4,783.00, p<.001, Θ = 0.29). No differences were found between the groups on the Friends subscale at either T1 (p = .427) or T2 (p = .259). Finally, no differences were found in the pregnant sample across time points using Wilcoxon signed rank tests in any of the three subscales: Significant Other (p = .242); Family (p = .153) and Friends (p = .798).

Section 8.7 – The Beliefs about Pain Control Questionnaire (BPCQ)

The scores on the Internal pain and Powerful Doctors pain sub-scales of the BPCQ were compared between the two samples and across the two time points. Table 8.6 shows the descriptive statistics for this data.

Table 8.6

Means (and standard deviations) for the Internal pain (I) and Powerful Doctors (PD) pain subscales of the BPCQ between the comparison and pregnant samples and across the pre- (T1) and post-natal (T2) time points.

Variable	Comparison group	T1	T2
Internal pain	15.64 (4.41)	15.03 (3.70)	14.78 (3.61)
PD pain	11.08 (3.71)	12.05 (3.56)	12.21 (4.70)

The comparison group scored higher on the Internal pain control subscale than the pregnant sample, who scored higher in pregnancy than post-natally. However, no significant differences were found on the Internal pain control subscale between the comparison group and the pregnant sample at T1 [t (258) = 1.18, p = .24], the comparison group and the pregnant sample at T2 [t (257.46) = 1.71, p = .09] (not assuming equal variances) or across the two time points [t (119) = 1.45, p = .15].

The scoring trend was reversed for the PD subscale, with the comparison group scoring the lowest and the pregnant group scoring the highest at T2. Significant differences were found between the two groups at T1 [t(258) = -2.15, p<.05, d = 0.27] and T2 [t(224.95) = -2.13, p<.05, d = 0.27]. However no difference was found in the pregnant group across the two time points [t (119) = -1.89, p = .06].

Section 8.8 – Summary of Chapter 8

A summary of the differences identified in the variables between the groups and across the time points is presented in table 8.7.

Table 8.7

Significant differences in variables between the comparison and pregnant samples and across the two time points in the pregnant sample.

Comparison / T1	Comparison / T2	T1 / T2
General health status	General health status	General health status
Health knowledge	Health knowledge	Health knowledge
PAM	PAM	PAM
Change the Situation	Change the Situation	Change the Situation
Significant Other	Significant Other	
Family	Family	
PD pain control	PD pain control	
	PAD	PAD
Devaluation		
Avoidance		
Symptom Reduction		
		Internal control

Four variables were significantly different between both groups at both time points and within the pregnant sample across both time points. Three variables were significantly different between both groups at both time points but not across both time points in the pregnant sample. The Positive Attitudes towards Doctors subscale was significantly different between the comparison group and the pregnant group at T2 and across the pregnant sample at both time points. Three variables were significantly different between the comparison group and the pregnant sample at T1. Internal control was significantly different across the two time points in the pregnant sample. Five variables did not produce significant differences between the two groups at either time point or within the pregnant sample across the two time points: Age; Powerful others control; Accommodation; Friends; and Internal pain control.

Chapter 9 – Discussion of findings in relation to research question 1

Research question 1 asked: What factors influence women's use of birth plans and what types of decisions are made in them? This section considers the results of the analyses relating to this research question and how they relate to the existing literature in the area. Sections 9.1 – 9.5 consider the five variables that were found to show significant differences between birth planners and non-birth planners in relation to the literature. In the second part of the chapter, section 9.6 considers the number and types of decisions contained in the birth plans and their significant relationships to particular variables.

Section 9.1 – Age as a factor in birth planning

The first influencing factor to emerge from the analysis when data from birth planners was compared with data from non-birth planners in Chapter 4 was age. Younger women were significantly more likely to plan for birth than older women, supporting the findings of Brown and Lumley (1998). However, Brown and Lumley (1998) also found that birth planners were more likely to be primiparous, consistent with the younger age finding. This study found no differences between primiparous and multiparous women in their use of a birth plan. This may be attributed, at least in part, to the fact that Brown and Lumley's (1998) research is 15 years old and was based in Australia. Modern UK practice is to include birth plans with maternity notes, which all pregnant women have regardless of parity. This may serve to encourage multiparous women to consider their choices for birth to a similar extent as do primiparous women. Therefore parity does not appear to be a factor in younger women using birth plans more than older women.

Section 9.2 – Internal Health Locus of Control as a factor in birth planning

Scores on the Internal Health Locus of Control scale were significantly lower in birth planners than in women without birth plans. This suggests that women who create birth plans do not locate their sense of control within themselves to the same extent as women without birth plans. The issue of control has been identified extensively within the literature as being important in preventing psychological distress (Bailham, Slade & Joseph, 2004; Czarnocka & Slade, 2000; Slade, 2006; Soet, Brack & Dilorio, 2003) and that loss of control is a risk factor for a negative birth experience

(Waldenström et al., 2004). Women themselves acknowledge how important control is to them in childbirth (Gibbins & Thomson, 2001;Larkin, Begley & Devane, 2012). However, other research has not found any difference in levels of control between women who did and did not use a birth plan (Lundgren et al., 2003). The location in which women perceive control of their health outside of labour may be different to the control that they actually experience during labour. This distinction is important to note when comparing studies that have looked at control in relation to childbirth.

The concept of internal control (rather than control per se) was addressed by Green and Baston (2003) who devised their own questions relating to internal control and found that pain and the relief of pain were strong predictors of perceptions of internal control. The current findings identified that pain decisions were the most common type of decision to feature in birth plans, which coincides with Green and Baston's (2003) findings. Similarly, Goodman et al. (2004) investigated the notion of personal control using the Labour Agentry Scale (Hodnett & Simmons-Troupea, 1987) and identified personal control as a significant predictor of childbirth satisfaction.

The key difference between all of these studies and the current research is that they investigated the issue of control specifically in terms of childbirth. Whilst women in the current research were all asked the questions from the MHLC scale whilst they were pregnant, the questions themselves do not relate specifically to labour and delivery, rather to a general principle of the locus of health control. Whist it is accepted that impending childbirth will be likely to have influenced the responses to the internal health locus of control questions, these findings may be indicative of a general attitude towards the location of health control in some women. The notion that the control of health is located internally to a lesser extent for birth planners than for women without birth plans suggests that the birth plans may themselves represent an important means of control for these women. If their sense of control is increased then potentially, according to much of the literature, so are their chances of a positive birth experience.

Mean scores for the IHLC scale in the current research were lower than Wallston et al.'s (1978) original sample and when the sample was split between birth planners and non-birth planners, the birth planners' mean IHLC scores were lower again. This may reflect a difference in locus of health control between pregnant women and a

general sample. It may also be influenced by a general shift in attitude towards the locus of health control. This is further supported by the IHLC scores from the non-pregnant comparison sample, which were actually lower than the means for the pregnant sample both during pregnancy and post-natally. These findings are indicative of a generally lower sense of internal control of health between 1978 and the current time. However, it is also acknowledged that there may be a gender effect in that Wallston et al.'s (1978) sample comprised both males and females, whereas the current sample was all female.

Wallston and Wallston (1981) advise against the division of sex in the analysis of health locus of control scores on the basis that no significant differences were found between males and females in the development and validation of the scale. However, Wallston and Wallston (1981) also describe findings reported in a symposium by Nicholson (1980, cited in Wallston & Wallston, 1981) whereby primiparous women's Internal health locus of control significantly decreased post-natally. Their male partners showed trends in the same direction but the difference did not reach significance. Wallston and Wallston (1981) suggest that this decrease could merely reflect a regression towards the mean or may have occurred as a result of the hospitalisation and childbirth experience. This means that the Internal health locus of control scores for pregnant women in Nicholson's (1980, cited in Wallston & Wallston, 1981) sample were actually higher than average, a reversal of the patterns identified in the current research. In summary then, thirty years ago pregnant women were found to score higher on Internal health locus of control than Wallston et al.'s (1978) average. Currently, however, pregnant women score lower than Wallston et al.'s (1978) average, especially if they are birth planners. Yet the lowest scorers of all were found in non-pregnant women in the current study. This seems to reflect the same pattern in terms of differences between pregnant and non-pregnant women but a general decrease in internal health locus of control over time.

Section 9.3 – Powerful Doctors pain control as a factor in birth planning.

Continuing on the subject of locus of control, scores on the Powerful Doctors subscale of the BPCQ were generally low in the sample as a whole. However, women with birth plans rated doctors as significantly more powerful in pain control than women without birth plans. This suggests that women were using their birth

plans as a means of communicating their choices to the doctors they perceived as holding the power to control their pain. This finding relates to the low scores of birth planners on the Internal subscale of the MHLC scale. The MHLC scale uses the concept of an external locus of health control as opposed to the internal locus of health control. The BPCQ, whilst based upon the principle of a locus of control, is more specific in identifying powerful doctors as the external locus of pain control in contrast to the internal locus of pain control. In using both scales, this research has identified that birth planners not only perceive their internal locus of health control as low but that the locus of pain control is sited in powerful doctors.

The BPCQ has been used in studies of pain control in arthritis and other chronic pain conditions but has never been used to measure beliefs about pain control before and after a period of acute pain such as childbirth. In fact, whilst control itself has received extensive research attention as a concept in childbirth, control of pain specifically has been considered far less. This is somewhat surprising given that pain is identified in the literature as a key concern in pregnancy. Slade, MacPherson, Hume and Maresh (1993) developed the Personal Control in Pain Relief Scale, which included one item on the position of midwives / doctors in controlling labour pain. McCrea and Wright (1999) used a modified version of this scale and found that both personal control of pain and midwives/doctors ability to control pain were both positively related to satisfaction. This suggests that women were happy that their pain was controlled regardless of where that control was located. Goodman et al. (2004) reported a slightly different picture in that childbirth satisfaction was positively related to labour pain and personal control but that the amount of labour pain experienced was not related to women's sense of control in labour. Manning and Wright (1983) found that self-efficacy expectancies were the best predictor of pain control. Their results favour a self-efficacy explanation of pain control in childbirth over a locus of control explanation. The current findings appear to indicate otherwise, with no differences found in self-efficacy between birth planners and non-planners, but differences in both locus of control-based measures. Wright, McCrea, Stringer and Murphy-Black (2000) found strong consensus of opinion regarding the control of pain in childbirth both in women before and after delivery and between women and their midwives. Midwives have a generally more woman-centred approach to childbirth than doctors and had the BPCQ been adapted to ask women in the current

study whether midwives were powerful in the control of pain, differences may not have emerged.

Section 9.4 – Change the Situation as a factor in birth planning

Birth planners scored higher on the Change the Situation subscale of the CCS than women without birth plans. Change the Situation is a problem-focussed coping style and is regarded as a positive approach. This suggests that women who use birth plans are more likely to be problem-focussed in their approach and try to cope by changing a situation more so than a non-birth planner. It is possible that the birth plan serves as one way in which women feel that they can construct the scenario of their childbirth in a way with which they feel able to cope. Although birth planners scored higher on the Change the Situation subscale than non-birth planners, the pregnant sample as a whole scored higher on this subscale at both time points than both the comparison group and Guppy et al.'s (2004) (non-pregnant) sample. Overall, then, pregnant women scored higher on the Change the Situation subscale than non-pregnant women but pregnant women with birth plans scored significantly higher than women without birth plans.

The literature that has looked at the issue of coping in relation to childbirth has focussed on coping in terms of pain management (Escott, Slade & Spiby, 2009; Escott, Slade, Spiby & Fraser, 2005; Escott, Spiby, Slade & Fraser, 2004; Spiby, Slade, Escott, Henderson & Fraser, 2003). Greenhalgh, Slade and Spiby (2000) looked at coping from a more general perspective in relation to childbirth but in Fathers during the perinatal and postnatal periods. The CCS has identified differences in the general coping styles of women who do and do not use birth plans in that birth planners tend to adopt a more problem-focussed approach to coping than non-birth planners.

Section 9.5 – Significant Others as a factor in birth planning

Women who had birth plans scored lower on the Significant Other subscale of the MSPSS than women who did not have birth plans. Rini, Dunkel Schetter, Hobel, Glynn and Sandman (2006) found that women who experienced effective partner support during pregnancy were less anxious than women with weaker partner support. This may indicate that the women in the current sample who had a birth plan

had written it in an attempt to reduce the anxiety experienced in low levels of partner support. Many papers focus on partner support during labour and delivery and discuss the effect of this on women's postnatal well-being and / or foetal health (e.g. Lavender, 1999; Beck, 2001; Waldenström, 2004; Iles, Slade & Spiby, 2011). There is however notably little literature that considers the impact of partner support in pregnancy for its own sake.

Section 9.6 - The number and types of decisions women made in their birth plans

Whilst 43% of women indicated that they did not have a birth plan, the majority of them did in fact include some preferences in the open section at the end of the questionnaire. This raises the question of what women consider a birth plan to be. For the purposes of the current research a birth plan was defined as any decisions, choices or preferences made mentally, verbally or textually, with regard to the entire childbirth process. Clearly many participants held a more formal idea of what constituted a birth plan and whether they had created formal birth plans reflected some differences in terms of the psychological and demographic variables discussed. However when given the opportunity to share any preferences, choices or decisions they had made for childbirth, 89% of all women in the sample did so. The vast majority of these statements related to pain control. This reflects the findings that birth planners tend to have low levels of internal health locus of control and consider doctors as powerful in pain control. It seems that birth plans may represent something far more than a set of preferences for childbirth for some women. Women may be using their birth plans at some level to either empower or protect themselves, or both. Empower by increasing their sense of personal control and protect from the powerful doctors who are in control of their pain.

Section 9.6.1 – The number of decisions in birth plans. The complexity of women's birth plans was measured by the number of preferences / choices / decisions stated in each. The number of these types of statements was positively correlated with both the Change the Situation and the Accommodation subscales of the CCS and negatively correlated with the Outcome expectancies total from the CBSEI. Differences in the number of decisions made in birth plans were also

identified between different clinics. This section considers the number of decisions in birth plans in relation to these variables.

Section 9.6.1.1 – Change the Situation and the number of decisions in birth plans. As indicated previously, Change the Situation is a problem-focussed coping style. Therefore the greater the number of preferences stated in a birth plan, the more potential there is to implement that birth plan to change a problematic situation in a way that is acceptable to the woman. This provides further evidence for the empowering function of the birth plan.

Section 9.6.1.2 – Accommodation and the number of decisions in birth plans. The Accommodation subscale represents a coping style whereby expectations are modified in order to meet the situation. Women with the most complex birth plans are also those who are most likely to use the Accommodation coping style. Whilst this is not intuitively what might be expected, it may be the case that, contrary to popular medical opinion, women who present with birth plans are actually more prepared to compromise and negotiate their perinatal care. In planning a birth, to any extent, requires a certain amount of knowledge regarding the options available. Multiparas have their own previous experience to draw upon but for primiparous women this knowledge is essentially theoretical. In acquiring the knowledge of these options (however this occurs) women make themselves aware of alternative scenarios. It is possible that women did not feel especially strongly about their chosen option in the first place. However, given that it is not a forced choice, if there were no strong feelings regarding the choice it may not have been expressed in the first place. Alternatively, women may be realistic in their birth planning and concede that their plan represents an ideal scenario but that they are willing and able to be flexible as the events of labour unfold. This supports the findings of Wallace and Hill (2003) and Callister (2005) who identified that women were willing and able to change their minds regarding their birth plans during labour without experiencing any negative repercussions postnatally.

Section 9.6.1.3 – Efficacy and the number of decisions in birth plans. Women with more decisions in their birth plans scored lower on the Efficacy subscale of the CBSEI. Women who were less confident in their own ability to negotiate their way through labour and delivery were expressing the most preferences for childbirth.

This may suggest that these women are creating birth plans not just as a means of communicating their preferences to their midwives but possibly also to try to ensure that their choices are expressed in advance in anticipation of them not being in a position to articulate these effectively in the moment. This relates to Parratt and Fahy's (2003) point in that if women with birth plans are also those who have the lowest childbirth self-efficacy, the emphasis placed on the plans in childbirth is ethically questionable as these women may (or at least believe they will) have reduced capacity in which to make informed choices or change decisions during childbirth.

Section 9.6.1.4 – Clinic attended and number of decisions in birth plans. The final difference identified in the number of decisions made in birth plans related to the antenatal clinic the women attended. Given that no relationship was found in the analysis to socioeconomic status and clinic attended, it is possible that there were differences in the midwifery advice given. Each of the four clinics in the study were held by different midwives and there may have been different levels of emphasis put on the birth plan. Also there may have been more discussion of options in some clinics, leading to women opting to make a preference in some areas. The relationship women have with their midwife may have also played a role in that some women may have felt more able to express their preferences with some midwives. Alternatively and dependant again on what the birth plan represented for these women, women may have felt that having a birth plan would help them to assert their preferences if they felt they were not being heard. This again reflects the importance of the role of the midwife as highlighted in a qualitative study by Callister (2005).

Section 9.6.2 – Pain control decisions in birth plans. Women who made the most decisions about pain control in their birth plans scored higher on the Devaluation subscale of the CCS and lower on the efficacy subscale of the CBSEI.

Section 9.6.2.1 – Devaluation and pain control decisions in birth plans. The Devaluation subscale represents a coping strategy whereby the problem is mentally minimized in order that its impact is not considered so important. Including lots of strategies for pain control in birth plans may be some women's way of playing down the prospect of impending pain in childbirth. This may sound counter-intuitive at first but to not include pain control decisions would represent avoidance behaviour

rather than devaluation. When this finding is considered in the light of the fact that women who included the most pain control decisions in their birth plans also scored lower on the efficacy subscale of the CBSEI, the picture begins to become clearer.

Section 9.6.2.2 – Childbirth self-efficacy and pain control decisions in birth plans. Fear of childbirth, which can sometimes be extreme (tokophobia) is a recognised problem and has attracted much research attention. Not least because women with more fear or anxiety over childbirth are more likely to request caesarean sections on non-medical grounds (electives). This not only has implications for the health of the mother, as a caesarean is a major operation, but also cost implications for the hospital trust concerned with her care. Sjögren and Thomassen (1997) found that these costs could be reduced if women received a psychotherapy intervention. Cases of elective caesarean sections were reduced in anxious mothers who received psychotherapy but use of epidurals and spinal blocks increased significantly. These findings suggest that it is the prospect of pain that is causing the fear and anxiety in these women.

Waldenström, Hildingsson and Ryding (2006) similarly examined the use of an intervention, this time in the form of counselling rather than psychotherapy, in women with a fear of birth. In contrast to the findings of Sjögren and Thomassen (1997), Waldenström et al. (2006) found that women who were fearful of childbirth and received counselling were more likely to request a caesarean section, though were not more likely to undergo an emergency caesarean section. No relationship was found in terms of mode of delivery for women with a fear of childbirth who did not receive counselling, though these women reported a more negative birth experience.

Sjögren (1997) identified that women's anxiety about childbirth was related to their lack of trust in obstetric staff, fear of their own incompetence, fear of their own or their baby's death, intolerable pain and loss of control. Fear of own incompetence in Sjögren's (1997) study may reflect the childbirth efficacy issues identified in the current research, whilst intolerable pain and loss of control may account for the greater number of pain control decisions being made by these women.

Furber, Garrod, Maloney, Lovell and McGowan (2009) explored contributors to psychological distress during pregnancy. Concerns over the pregnancy, trauma from

previous pregnancies and previous negative experiences more generally were identified as factors. Analysis centred on these causes, their impact and means of moderating them, which included both positive and negative strategies.

Saisto and Halmesmäki (2003) also identified anxiety and fear of childbirth as a major factor in elective caesarean sections. Fear of childbirth was also found to be associated with general anxiety, low self-esteem, depression, dissatisfaction with partnership and lack of support. Most of these factors were beyond the scope of the current research but support was measured in three forms yet was not found to be associated with pain control decisions, devaluation or efficacy.

Whilst elective caesarean section rates are reported to be higher amongst women with anxiety or fear of childbirth, emergency caesarean sections were not found to be predicted by such psychological variables by Johnson and Slade (2002). This study compared its findings with a similar Swedish study that found conflicting results. Cultural differences were considered as a factor in these differences, which must be acknowledged here as the majority of the research cited in relation to fear and anxiety over childbirth and elective caesarean rates is also Swedish. Therefore there may be limits as to the generalizability to a British sample, especially when these variables were not all directly measured. However, a subsequent review of the literature by Johnson and Slade (2003) led them to conclude that the fear of childbirth does indeed seem to be associated with both caesarean sections generally and with prolonged labour.

Haines, Rubertsson, Pallant and Hildingsson (2012) identified ‘types’ of women in respect of their psychological approach to childbirth. One of these was termed the ‘fearful’ type, represented typically by a woman who is afraid of birth, is worried about the impact of birth (particularly in terms of pain and control issues), perceives little freedom of choice in the birth process and considers birth unnatural. Again, these pain, control and lack of choice issues resonate with the current findings whereby women with low childbirth efficacy made the most pain control decisions in their birth plans.

Section 9.6.3 – Environment decisions in birth plans. Decisions about birth environment in the birth plans differed between clinics and were positively associated with: the Positive Attitude towards Doctors subscale of the ADMS; the Change the

Situation subscale of the CCS; and Powerful Doctors subscale in the BPCQ. These results seem to reflect a set of attitudes whereby doctors are held in high esteem and are trusted with controlling the pain of childbirth.

Section 9.6.3.1 – Change the Situation and environment decisions in birth plans. The problem-focussed coping style of the Change the Situation subscale is representative of a tendency to make more decisions about the birth environment in the birth plan. Environment decisions were coded as any statement of preference for location of birth or for inclusion of props or sensory stimulation (see Appendix H for full list). Making decisions about the environment therefore is very much about changing the situation in order to be able to cope. This set of results seems to indicate a very different mental attitude to childbirth to that reflected in the pain control decision results. The environment decision results seem to represent more positivity towards, trust in and respect for the medical profession. Within that trust perhaps comes the confidence to manage the environment of birth in a pro-active manner to suit oneself.

Section 9.6.3.2 – Powerful Doctors pain control and environment decisions in birth plans. Concerns about the birth environment, particularly with regard to the location of birth, have been linked with the issue of control (Hodnett, 1989; Morison, Hauck, Percival & McMurray, 1998; Sacks & Donnenfeld, 1984). However the only control issue that emerged in the current findings in terms of environment decisions was the control of pain. Women who perceived doctors as powerful in pain control made more decisions about the environment of their birth. A return to the data showed that many of these decisions pertained to a hospital delivery. This is a different slant to the previous research, which revealed the control issue was based upon a certain level of mistrust of the medical environment, resulting in a preference for alternative delivery venues such as midwife-led units. Such facilities have been found to be of benefit to women in terms of requiring fewer medical interventions and experiencing more satisfaction with the birth (Hodnett, Downe, Edwards & Walsh, 2005). Women who opt for delivery in an alternative to a hospital setting have been found to share certain characteristics. Waldenström and Nilsson (1993) identified these as older, healthy, middle-class women who were concerned with the psychological aspects of birth. However, the current research did not find any demographic or health associations with environment decisions.

Section 9.6.3.3 – Positive Attitudes towards Doctors and environment decisions in birth plans. Women who hold positive attitudes towards doctors are more likely to consider it important that they negotiate childbirth within easy access of good obstetric care. The majority of decisions in the birth plans relating to environment for birth concerned a hospital delivery. Therefore these women are expressing a clear preference for hospital birth in line with the regard they hold for the medics who work there and whose role it is to ensure a safe outcome for both mother and baby. Marteau (1990) found that pregnant women attending antenatal clinics also scored highly on this subscale, to similar levels as medical students themselves. Nurses and behavioural scientists scored significantly lower in their positive attitudes towards doctors. Items stating 'all doctors are good doctors' and 'doctors know what's best for you' convey the sense of complete trust and power invested in the medical profession by holders of these attitudes. It is therefore not surprising that they would ensure their preferences regarding birth environment were explicitly featured in their plans.

Section 9.6.3.4 – Antenatal clinic and environment decisions in birth plans. Women from clinics A and C made more environment decisions in their birth plans than women from clinics B and D. Clinics A and C are located in suburban areas on opposite sides of a city in the North West of England. Women from clinic A tended to be older, multiparous and less likely to attend antenatal classes. Women from clinic C were not significantly different to women from other clinics in terms of age, parity, occupation, ethnic group, antenatal class attendance, birth plan use, or existing medical conditions. There is no evidence here therefore to suggest that these factors were implicated in the increased incidence of environment decisions in birth plans.

Section 9.6.4 – Position decisions in birth plans. Women who made more decisions about position in their birth plan also scored higher on: general health; Positive Attitudes towards Doctors; Powerful Others control; Change the Situation; Family support; Powerful Doctors pain control; and birth expectancies. In addition, primiparous women made more position decisions than multiparas and students made more position decisions than other occupational groups.

Section 9.6.4.1 – Positive associations with position decisions in birth plans. Maternal choice of position for labour and delivery is advocated in literature as a result of clinical trials (Gardosi, Sylvester & Lynch, 1989; Gupta, Hofmeyr & Shehmar, 2004; de Jong et al., 1997; Lawrence, Lewis, Hofmeyr, Dawswell & Styles, 2009). Benefits reported for upright delivery variously include reduced pain, duration, perineal trauma and intervention. Three of the positively correlated variables with position decisions were also positively correlated with environment decisions as discussed previously. Women who scored highly on these measures were clearly considering their physical experience of their birth very carefully, with regard to their surroundings and their comfort within them. These women also reported higher general health, in line with Waldenström and Nilsson's (1993) findings. Their locus of control was situated externally, in Powerful Others, concurring with the higher Positive Attitudes towards Doctors and Powerful Doctors pain control scores also found in relation to number of position decisions. In addition, women who made more position decisions reported higher levels of perceived social support from their families and higher expectancies of their birth. This suggests that whilst they trust and respect the medical doctors who they consider are in control of their birth, they perhaps feel sufficiently supported and have a positive attitude towards the impending birth that enables them to still make choices regarding their position for labour and delivery. These findings indicate that the relationship between the women in the current sample and the medical profession is a healthier and more functional situation than much of the previous literature, particularly with regards to birth plans, has portrayed.

Section 9.6.4.2 – Differences in position decisions in birth plans. Primiparous women made more position decisions than multiparas, yet there were no parity differences in any of the other decision categories, or in the overall length of the birth plan. This research has found that primiparous women are more likely to have a birth plan than multiparas. It seems that those multiparous women who do have a birth plan create them of similar length and content to primparous women's plans, with the apparent exception of the position decisions. The nature of these decisions may relate more to the prior experience of the multiparous women than the other categories of decision. Having experienced childbirth at least once, multiparas may recognise that decisions about position during both first and second stage

labour are often best made in the event when conditions such as pain and comfort can be better estimated. The decisions made by primiparous women regarding their positions for labour and delivery cannot be based on prior personal experience and must then be informed by the woman's own information gathering. She may rely on accounts from family or friends, she may watch television programmes or read magazines, or she may read text books or research papers. The notion that labouring and delivering upright can reduce effort, pain and physical trauma is likely to appeal to the primiparous woman but the multipara has the benefit of experience that tells her that in reality upright positions are not always possible to achieve for a myriad of reasons.

The finding that students made more position decisions than any other occupational group is more difficult to explain. No association was found with age and position decisions so it does not seem to be related to younger women. One possible explanation is that students are perhaps more inclined to seek information than other groups through the very nature of their current life situation. This may have led them to make more position decisions in the same way that the primiparous women did, as described previously.

Section 9.6.5 - Support decisions in birth plans. Decisions about support in childbirth were positively associated with the Change the Situation subscale of the CCS and the Family subscale of the MSPSS. Support decisions were negatively associated with the Devaluation subscale of the CCS.

Section 9.6.5.1 – Coping styles and support decisions in birth plans. Support in childbirth has been identified as a key factor in childbirth satisfaction (Lavender et al., 1999; Waldenström, 1999; Waldenström et al., 2004). Therefore women who value any support available to them at such a time are more likely to make decisions about it in order to optimise their birth experience. The relationship with the Change the Situation subscale reflects this attitude in the sense that this problem-focussed coping strategy represents a sense of agency with which women can make choices regarding who they want with them as support in childbirth. The importance placed on such decisions is also related to the negative association found with the Devaluation subscale. The issue of social support cannot be afforded importance and at the same time devalued. Therefore women who made more

support decisions in their birth plan tended not to use devaluation as a coping strategy.

Section 9.6.5.2 – Perceived family support and support decisions in birth plans. The positive association between support decisions and the Family support subscale suggests that women making decisions about their support in childbirth feel highly supported by their families. It is interesting to note that Significant Other support was not a significant variable in relation to support decisions but that the support of the wider family was important to women making support decisions for childbirth. Studies have identified partner support during childbirth as important for a positive outcome (Bryanton, Gagnon, Johnston & Hatem, 2008; Czarnocka & Slade, 2000; Gibbins & Thomson, 2001; Hardin & Buckner, 2004; Lavender et al., 1999; Somers-Smith, 1998). However, women in the current study with birth plans notably rated their partner support lower than women without birth plans. The current results suggest that birth planners consider support in childbirth as important but they locate that support as coming from their wider family rather than from their partner.

Section 9.6.6 – Medical decisions in birth plans. The number of medical decisions made in the birth plans was positively associated with the extent of existing medical conditions and with the Change the Situation subscale of the CCS. Women's choices were clearly being influenced by their physical health. Choice might have been restricted in some respects by the presence of existing medical conditions, which they were unable to change. However, these women demonstrated a problem-focussed coping strategy in changing the situation, which showed that although they could not change their medical status, they could still make choices about their medical care in childbirth. These findings are further illuminated by the negative associations found between the medical decisions in the birth plan and: the Positive Attitudes towards Doctors subscale of the ADMS; the Powerful Others subscale of the MHLCS; birth expectancies and childbirth self-efficacy. Women who made the most medical decisions in their birth plans did not hold very positive attitudes towards doctors and did not perceive others to be powerful in the control of health. However, despite these attitudes and perceptions, these women's expectancies of birth were low and they had little confidence in their own childbirth efficacy. These results seem to indicate that these women had little faith in the medical profession as well as in themselves. This may explain why their expectations of childbirth were low. Previous

studies have also shown that women with lower levels of childbirth self-efficacy make more medical decisions for childbirth (Dilks & Beal, 1997). Furthermore, in the development of the CBSEI, Lowe (1993) also found that childbirth self-efficacy was negatively correlated with external health locus of control. Therefore whilst these findings support previous research, together they provide a fuller picture of the psychological variables associated with the medical decisions women make in their birth plans.

Section 9.7 – Summary of Chapter 9

Chapter 9 has discussed the results of Chapter 4, which considers the factors that influence women's use of birth plans and the types of decisions made in them. The profile of the birth planner as typically: Younger, with a lack of perceived support from a significant other; a belief that doctors are powerful in pain control and that control of health is not located internally; and a tendency towards problem-focussed coping largely fits in with findings from previous studies. However some new, some unexpected and some unintuitive findings were also discussed with possible explanations from previous evidence.

The forms of coping were most frequently associated with the extent and type of decisions in birth plans. Attitudes towards doctors also featured in three out of the five decision types. Beliefs about pain control, perceived social support, health locus of control and childbirth self-efficacy each featured in two types of decision. The clinic attended, general health status, parity, occupation, existing medical conditions and birth expectancies were each implicated in environment, position or medical decisions. Age, ethnic group, antenatal education, health knowledge and information-seeking were not identified as factors in any decision types. The nature of the decisions made in birth plans therefore seem to be mostly influenced by the preferred coping form and to a lesser extent by attitudes towards doctors. However, various other factors measured in the current research have also been identified as relevant to certain decision types.

Chapter 10 – Discussion of findings in relation to research question 2

Research question 2 asked: What are the post-natal psychological outcomes for women based upon social, health and psychological factors, and the existence, nature, complexity and evaluation of birth plans? This section considers the results of the analyses relating to this question and how they relate to the existing research in the area.

Section 10.1 – Age as a factor in post-natal psychological outcomes

Older women in this sample rated their birth experiences significantly more positively than younger women did and significantly more positively than their birth expectancies. However age was not associated with EPDS scores or birth story valence. Age did not emerge as a significant predictor of birth experience ratings but did predict differences between expectancies and experiences. Waldenström (1999) found no difference in age in terms of a positive birth experience using a seven-point rating scale (compared with the five-point scale used in the current research). Similarly, McCrea and Wright (1999) found that age was not related to women's satisfaction with their birth experience, though this research was focussed on personal control in pain relief, rather than feelings about the birth experience more generally. However, Waldenström et al. (2004) did find that younger women reported a more negative birth experience, again using a seven-point rating-scale. These mixed findings, in addition to the fact that only one of the outcome measures in the current research identified age as a significant factor, suggests that age is perhaps not the most important consideration in terms of outcomes. Certainly post-natal psychological well-being does not seem to be related to age, as evidenced in the EPDS scores. So even if younger women rated their birth experience more negatively than older women, they did not appear to have been adversely affected by it in terms of their mental health. It was interesting to note that whilst older women rated their birth experience positively and significantly more so than they were expecting, they did not actually use any more positive language in their accounts of their births than did younger women. It is possible that their actual experience was comparable to their younger counterparts but that older women were somehow more appreciative of the experience and its positive outcome than were the younger women.

Section 10.2 – Parity as a factor in post-natal psychological outcomes

Primiparous women in the current sample included significantly more negative statements in their birth stories than did multiparous women. However, they did not rate their birth experiences any more negatively, nor did they score any higher on the EPDS than multiparous women. Parity did not emerge as a significant predictor of the negative statements in birth stories. Several studies have found primiparous women to report more negative birth experiences (Green, Coupland & Kitzinger, 1990; Waldonström, 1999; Green et al., 2003; Waldenström et al., 2004). Other studies have not found such a relationship (Seguin, Therrien, Champagne & Larouche, 1989; Waldenström, 1996). Waldenström (1999) suggests that this may be down to smaller sample sizes. However the sample sizes of both these studies were larger than that of the current research. Differences in the way in which birth experiences were measured across the studies may have also contributed to the contrasting results.

Section 10.3 – Occupation as a factor in post-natal psychological outcomes

Students and unskilled workers rated their birth experiences more negatively than several other occupational groups. In addition, students and unskilled workers reported a greater difference between birth expectancies and birth experience, with experience being significantly more negative, than several other groups. This was a curious finding and one that is difficult to explain in socio-demographic terms as students and unskilled workers are often (though by no means exclusively) from differing social groups. This finding becomes still harder to interpret when taking into account that students and unskilled workers included among the fewest negative statements in their birth stories. Skilled workers included far fewer positive statements in their birth stories than other occupational groups and skilled workers along with unemployed participants included the most negative statements. White collar workers were the only group whose experience of birth exceeded their expectations. No differences were found between the occupational groups in EPDS scores. Occupation emerged as a significant predictor of birth experience ratings and the amount of positive statements in birth stories. However, it was not found to predict the difference between birth expectancies and birth experience or the amount of negative statements in birth stories.

The mixed results for occupation as a factor in post-natal psychological outcomes are not peculiar to the current study. Waldenström et al. (2004) found that unemployed women had a significantly more negative birth experience than employed women. Educational level however, shows no significant differences in birth experiences (Waldenström, 1999; Waldenström et al., 2004). In measuring satisfaction with the childbirth experience, Goodman et al. (2004) found that employed women were more satisfied than unemployed women. However, McCrea and Wright (1999) found no difference in women's satisfaction with pain relief based on social class.

When the outcome measures were combined and ranked by occupational status in the current study, unemployed women were ranked forth out of seven categories. This suggests that unemployment itself is not a significant factor in post-natal psychological outcomes, despite this group including more negative statements in their birth stories. Waldenström et al.'s (2004) study included a range of employment categories (unemployed, employed, student, maternal leave, housewife, own business, unspecified other) similar to those used in the current study. However Waldenström et al.'s (2004) results produced stronger evidence for unemployment as a factor in a negative birth experience than other work in this area. Despite the similarity in the design of the element of the research, no such finding was identified in the current study. It should be noted that occupation and employment may be experienced differently between Sweden and the UK as they are so heavily influenced by the culture and politics of the country. This may at least partly explain the differences in these findings. In addition, Waldenström et al. (2004) obtained data one year post-partum. This is in contrast to the 1-2 months after birth in which outcomes were measured in the current study. It is interesting to note that the delay in Waldenström et al.'s (2004) post-natal data collection produced more negative responses from the unemployed group than the findings from the current study relatively soon after birth. This seems in contrast to common expectations that difficult experiences are perceived less acutely over time.

Section 10.4 – Ethnicity as a factor in post-natal psychological outcomes

There were no differences identified on any of the outcome measures by ethnicity in the current research. This has also been the case in other studies in the area (McCrea & Wright, 1999; Waldenström, 1999, Waldenström et al., 2004; Goodman et

al., 2004; Green & Baston, 2003). In all of these studies, as in the current research, the sample was predominantly Caucasian and representative of the local demography. Race / ethnicity was identified as a significant predictor of depressed mood in the post-natal period in Seagre, Losch and O'Hara's (2006) study of African-American women in Iowa, USA. A study that focuses on racial differences in childbirth outcomes and which draws upon larger numbers of ethnic minorities would be required to identify whether any differences do exist in the increasingly diverse UK population. Such a study would benefit health care providers when designing services for their user groups. It would also be of clear benefit to women in ethnic minority groups in the UK to have their experiences and needs recognised and addressed.

Section 10.5 – Physical health and preparation for childbirth

This section considers variables concerning the physical health of women in the sample and their information acquisition. Specifically these are: Self-rated health status; existing medical conditions; ante-natal class attendance; access to information; and self-rated health knowledge. Each of these variables are considered in relation to post-natal psychological outcomes.

Section 10.5.1 – General health status and existing medical conditions as factors in post-natal psychological outcomes. Chapters 4 and 9 identified and discussed that more complex birth plans were made by women with complex existing medical conditions. However, no differences were found in any post-natal psychological outcome measures between women with complex medical conditions and those without. This finding suggests that where there were medical reasons for complex birth plans there were no implications for psychological outcomes. Women's self-rated general health status also produced no significant associations with any of the outcome measures. Taken together these findings give a strong indication that the physical health and medical condition of women is not associated with post-natal psychological outcomes. In real terms, it seems that women do not appear to experience any adverse (or otherwise) psychological outcomes despite the added issues their health conditions present them with in childbirth.

Section 10.5.2 – Ante-natal class attendance as a factor in post-natal psychological outcomes. Women who attended ante-natal classes included

significantly more negative statements in their birth stories than women who did not attend ante-natal classes. This finding may be linked to the finding that primiparous women included more negative statements in their birth story than multiparous women (as discussed in Section 10.2). This is due to primiparous women being more likely to attend ante-natal classes as they are having their first baby. This finding echoes that of Waldenström et al. (2004) who also found that women who had not attended antenatal classes rated their birth experience as significantly more positive than did women who had attended antenatal classes. This finding was also attributed to the fact that women at antenatal classes are more likely to be primiparous and the relationship was therefore not a causal one. Antenatal class attendance was not found to predict the amount of negative statements in women's birth stories.

Interestingly, Waldenström et al. (2004) obtained birth experience data using a 7-point rating scale from very negative to very positive. However, the equivalent scale in the current study did not produce a significant difference in birth experience between women who did and did not attend antenatal classes. Rather it was the valence of their birth stories that produced a significant difference in the current study. This provides evidence for the merits of using more than one post-natal psychological outcome measure. Asking newly delivered women to self-report about their birth experiences is especially prone to demand characteristics. This is a consequence of the social pressures for the new mother to be overjoyed at the safe arrival of her baby. Such influences may be a reason why fewer differences were identified using a rating scale than were found in the birth story valence. This said, the previously addressed differences in post-natal testing time points and cultures between the current study and that of Waldenström et al. (2004) are also acknowledged as of relevance here.

Studies that have measured satisfaction with birth experiences have produced different findings in terms of antenatal education. Quine, Rutter and Gowen (1993), Hart and Foster (1997) and Goodman et al. (2004) all found childbirth satisfaction to be higher amongst women who had attended antenatal classes. This contrast may be due to women's representations of satisfaction as the achievement of the objective of safely delivering a healthy baby. It is possible to be satisfied at having fulfilled this whilst having positive or negative feelings about the experience. Therefore, whilst these studies might appear to be in contrast to the findings of the

current study, the measurement of a different aspect of post-natal psychological outcomes may account for such differences.

Section 10.5.3 – Information access and health knowledge as factors in post-natal psychological outcomes. Women who felt they had sufficient information to make informed choices about their labour and delivery rated their birth experience significantly lower than women who felt they had less sufficient information. The discrepancy between birth expectancies and birth experiences was also significantly more negative for women who felt they had sufficient information. It may be that whilst women felt they had sufficient information, they may actually not have done. Alternatively, the information they had may have given rise to certain expectations which were then not met in reality. Having sufficient information for childbirth emerged as a significant predictor of the rating difference between expectancies and experience of childbirth.

Women who felt they knew how to access information on the care of their baby included fewer negative statements and more positive statements in their birth stories. This suggests that women who felt able to access baby-care information reported their birth experience more positively. The same relationship was identified in women's responses to whether they felt able to ask their health visitor questions. Women who felt most able to do so included more positive and fewer negative statements in their birth stories. The access to information post-natally is clearly related to birth story valence in these findings.

The benefits to women of having good access to health care information is further reflected in the results for self-rated health knowledge in relation to post-natal outcomes. Women who rated their health knowledge higher tended to also rate their birth experiences higher and significantly more so than their birth expectancies. They also included more positive statements in their birth stories. Women's health knowledge emerged as a significant predictor of birth experience ratings and the amount of positive statements in birth stories.

Women in the 21st century routinely turn to the internet for health information, particularly in relation to pregnancy and childbirth (Larsson, 2009; Lagan, Sinclair & Kernohan, 2010, 2011). This is often to supplement information provided by health care workers but can also be due to dissatisfaction with the information they receive

or lack of time during consultations (Lagan et al., 2010). Women in the current study appeared to be satisfied with the information they were receiving from both midwives and health visitors. However, women who felt they had sufficient information, good health knowledge and knew how and where to access information may not have necessarily been referring to health care systems as the source of this information. They may have been using the internet (and indeed other sources) to supplement information provided by midwives and health visitors. However, in contrast to Lagan et al. (2010) this does not seem to be due to any inadequacy with the amount or quality of information provided by them.

Waldenström et al. (2004) considered women's satisfaction with information provided about pregnancy, birth and puerperium in relation to the valence of their birth experience. Women reported more positive feelings about their birth experience when more satisfied with the information provided. This finding is supported by the current study.

Collectively, these findings show that health information is important in post-natal psychological outcomes in terms of the way women perceive their birth experience.

Section 10.6 – Birth planning and post-natal psychological outcomes

This section considers women's birth plan use and evaluations of them, the complexity of the birth plans and the nature of the decisions in them in relation to the post-natal psychological outcome measures.

Section 10.6.1 – Birth plan use as a factor in post-natal psychological outcomes. Women with birth plans included significantly fewer positive statements in their birth stories than did women without birth plans. This was the only outcome measure to produce differences between birth planners and non-birth planners. Birth plan use emerged as a significant predictor of the amount of positive statements in women's birth stories. No differences were identified on EPDS scores, in birth experience ratings (or differences between expectancies and experience) or in the number of negative statements in the birth stories. Therefore, whilst there does not appear to be any adverse effects from the use of birth plans or not, women who used birth plans were not reporting their birth story with the same extent of positivity as non-birth planners.

Lundgren et al. (2003) found no differences in overall birth experience between women who did and did not use a birth plan. However, women who used birth plans rated their relationship with the midwife during labour lower than women who did not use birth plans. Whilst all women in the study rated the relationship with the midwife relatively highly, the difference identified between women with and without birth plans questions whether the intended purpose of the birth plan as a facilitator of communication between woman and caregiver (Kitzinger, 1987) is being fulfilled. Such issues may be part of the reason why women in the current study who used birth plans were less positive about their birth experiences.

Studies that have examined the role of birth plans have largely found that women have perceived them as beneficial during childbirth (Ekeocha & Jackson, 1985; Moore & Hopper, 1995; Whitford & Hillan, 1998). Others have reported little value in birth plans (Brown & Lumley, 1998; Lundgren et al., 2003) and suggest that many women change their minds during labour and opt for pain relief they had expressed against in their plans (Deering et al., 2006). The current study has not identified any major differences in psychological outcome post-natally between birth planners and non-birth planners. However, the profile of the birth planner identified in Chapter 9 highlights characteristics that are either in contrast with positive post-natal psychological outcomes or features in negative psychological post-natal outcomes. This indicates that it may not be the use of the birth plan itself that relates to post-natal well-being but the characteristics of women who are more likely to use a birth plan.

Section 10.6.2 – Birth plan evaluation as a factor in post-natal psychological outcomes. Women who used birth plans and rated their usefulness positively also rated their birth experience more positively than women who rated their birth plan usefulness more negatively. Women who rated their birth plan positively also rated their birth experience more positively than their birth expectations. This indicates that for some women at least the birth plan appears to have served both a useful and valued purpose and has positive links with how they perceive their birth experience. These findings support those of Ekeocha and Jackson (1985), Moore and Hopper (1995) and Whitford and Hillan (1998) and contrast with those of Brown and Lumley (1998) and Lundgren et al. (2003). However, the adherence to the birth plan was not associated with any of the post-

natal psychological outcome measures. Thus there did not seem to be any relationship to psychological well-being post-natally whether women's birth plans were fulfilled or not. This finding supports those of Yam et al. (2007) whose qualitative research in Mexico also found that women were satisfied with their childbirth experiences and valued their birth plans despite any deviation from them.

Section 10.6.3 – Birth plan complexity as a factor in post-natal psychological outcomes. Birth plan complexity was measured by the total number of decisions identified in the birth plans. These scores were positively associated with EPDS scores showing that women who made more decisions in their birth plans were likely to experience greater levels of psychological distress post-natally than women who made fewer decisions. However, the number of decisions in birth plans did not emerge as a significant predictor of EPDS scores. It is interesting that women who had complex existing medical conditions made more complex birth plans yet were not associated with any negative (or indeed positive) psychological outcomes (Section 10.5.1). However, women who made more complex birth plans irrespective of their medical status had higher levels of post-natal distress as evidenced in their EPDS scores. The unpredictability of labour and delivery essentially means that its course cannot be anticipated. Sometimes a birth plan represents more than a woman's preferences for childbirth to her. It becomes the suit of armour with which she protects herself in an attempt to retain some control in an unknown and potentially hazardous situation (Robinson, 1999). She places her faith in these decisions to the extent that their fulfilment is the only way in which she feels she can survive childbirth psychologically intact. Therefore it is perhaps little wonder that some degree of distress is experienced when some or all of these decisions remain unfulfilled as a result of the course of her childbirth.

Section 10.6.4 – Decision types and post-natal psychological outcomes. This section considers four of the decision types identified in the birth plans (pain control, position, environment and medical) in relation to the post-natal psychological outcome measures. Decisions about support in the birth plans were not associated with any post-natal psychological outcome measures, therefore issues of support and post-natal outcomes will be considered in relation to findings from the MSPSS in section 10.9.

Section 10.6.4.1 – Pain control decisions as a factor in post-natal psychological outcomes. The most common decision type in birth plans were those related to pain control. Therefore it is unsurprising from the considerations of Section 10.6.3 that these decision types were also related to higher scores on the EPDS. In addition, women who included more pain control decisions in their birth plans rated their birth experience more negatively. Pain control has been identified as an important factor in childbirth experience and satisfaction (Lavender et al., 1999; McCrea & Wright, 1999; Waldenström, 1999; Waldenström et al., 2004; Goodman et al., 2004; Green & Baston, 2003). The current research has also identified that making more decisions about pain control in the birth plan is associated with negative perceptions of the birth experience and higher levels of post-natal psychological distress.

Section 10.6.4.2 – Position decisions as a factor in post-natal psychological outcomes. Women who made more decisions regarding position in their birth plans rated their birth experience more negatively than women who made fewer position decisions. Women who made more decisions regarding position in their birth plan also rated their birth experience more negatively than their birth expectations. Position decisions represented the fewest number of decisions in birth plans by type. Position decisions were the only other decision type than pain control decisions to be associated with negative rating of the birth experience. It may be that position decisions are motivated by similar issues to pain control decisions – the desire to minimize or effectively manage pain in childbirth. On returning to the plans themselves, most of the position decisions referred to maintaining mobility and staying active for as long as possible. Mobility during labour is advocated as facilitating the progress of labour and women who are mobile during stage one labour require less pharmacological pain relief (Hamilton, 2004). Therefore women may be making decisions regarding their positions for birth in a bid to hasten the process and reduce the need for pain relief. The association between the number of such decisions and more negative birth experiences than expected suggests that this strategy may have been either ineffective or unrealised for some participants.

Section 10.6.4.3 – Environment decisions as a factor in post-natal psychological outcomes. Women who made more decisions regarding the environment in their birth plans scored higher on the EPDS than women who made

fewer environment decisions. However, environment decisions did not emerge as a significant predictor of EPDS scores. Environment decisions were the second most common decisions in birth plans and included choices such as the location of birth and water-birth options (see Appendix H for full explanation of environment decision coding). Water-births are also associated with pain relief though location may be decided for more practical reasons. Most of the decisions relating to location were about wanting to deliver the baby in hospital. Knowing the appropriate point at which to go to the maternity unit was a common issue in many women's birth stories post-natally, with reports of repeated telephone calls, assessments, discharges and readmissions causing some anxiety. In the birth plans however, the majority of women seemed to have a clear expectation that they would give birth in hospital and often that they wanted to spend minimal time there. However, the balance of labouring at home for as long as possible and reaching the hospital in time for delivery seemed to be more problematic in reality than had perhaps been anticipated, certainly from the birth plan information. It may be that issues of this sort were a factor in the higher post-natal distress scores observed in some women.

Section 10.6.4.4 – Medical decisions as a factor in post-natal psychological outcomes. In contrast to other decision types, medical decisions in birth plans were associated with positive birth experiences (more so than expected). However, they were also related to higher EPDS scores and more negative statements in the birth stories and emerged as significant predictors of both outcome measures. Medical decisions related broadly to interventions during labour and delivery (Appendix H). In the birth plans some medical decisions were based on the acknowledgement that a certain intervention had been advised due to complications in previous pregnancies, existing medical conditions, or position of the baby. However, the majority of medical decisions concerned the hope of avoiding certain interventions. This is reminiscent of Robinson's (1999) observation that 'there is no other sphere of health care where people entering hospital felt compelled to list those interventions they wanted to avoid.' (Robinson, 1999, p. 642). The adherence to birth plan rating mean was just above the 'somewhat ignored' point, suggesting that most women did not get the birth they had planned and had possibly not managed to avoid some of the interventions they had hoped to. This may indicate why post-natal distress was higher in women who had made more medical decisions and their birth

stories were more negative in valence. However, it does not explain why women would rate their birth experiences positively and better than expected. It may be that unexpected events during labour or delivery had caused a re-evaluation resulting in women's primary concern being the safe delivery of their baby, rather than the need to avoid certain interventions. The achievement of this objective may have led to higher birth experience ratings based on relief. However, unreconciled feelings of distress still seemed to remain based on the higher EPDS scores and negative birth stories.

Section 10.7 – Issues around control and post-natal psychological outcomes

This section considers the measures that are based around the concept of locus of control together in relation to the post-natal outcome measures. These measures are: the Multidimensional Health Locus of Control scale (MHLC); the Attitudes towards Doctors and Medicines Scale (ADMS); and the Beliefs about Pain Control Questionnaire (BPCQ). The Internal Health Locus of Control (IHLC) subscale of the MHLC and the Internal subscale of the BPCQ will be considered together in section 10.7.1 as they are conceptually related. Similarly the Powerful others (PHLC) subscale of the MHLC scale and the Powerful Doctors (PD) subscale of the BPCQ will be considered in section 10.7.2. Marteau (1990) found that scores on the Positive Attitudes towards Doctors (PAD) and the Positive Attitudes towards Medicines (PAM) subscales of the ADMS were positively correlated with the PHLC subscale of the MHLC. Therefore these two subscales will also be considered in section 10.7.2.

Section 10.7.1 – Internal locus of health and pain control and post-natal psychological outcomes.

Results from the IHLC and the Internal pain control subscales followed unsurprisingly similar patterns across the five outcome variables. Both subscales were positively correlated with birth experience ratings and with the difference between birth expectancy and birth experience ratings. Women who perceive the locus of health and pain control as internal rated their birth experience as more positive than they had expected and more positive than women who had lower levels of internal health and pain control. There was no correlation between these two subscales and either EPDS scores or the percent of negative statements in birth stories. However, the Internal pain subscale of the BPCQ was negatively correlated with the percent of

positive statements in birth stories. There was no equivalent finding for the IHLC on this outcome measure. Although women with higher internal locus of health and pain control rated their birth experiences more positively, those with higher internal pain control actually included fewer positive statements in their birth stories. Internal pain control emerged as a significant predictor of women's birth experience ratings and the amount of positive statements in their birth stories.

The BPCQ was developed on both patients and non-patients and on people with and without pain (Skevington, 1990). However, the vast majority of studies that have used it since in published research have focussed on various chronic pain conditions. Only one study has previously used the BPCQ in relation to childbirth. Skevington and Wilkes (1991) found that women in childbirth preparation classes who scored higher on Internal pain control also experienced less depression and better mental health generally. This finding is partly supported in the current research where women with higher Internal pain control scores also rated their birth experiences higher. However, the significantly fewer positive statements in the birth stories of women with higher levels of Internal pain control do not add to this support.

Section 10.7.2 – External locus of health and pain control and post-natal psychological outcomes. The PHLC subscale of the MHLC scale and the PD subscale of the BPCQ followed similar patterns across the five post-natal psychological outcome measures. No relationships were established with either measure and: the EPDS scores; birth experience ratings; differences between birth expectancies and birth experiences; or the percent of negative statements in birth stories. However, there was a significant negative relationship between scores on the PHLC subscale of the MHLC and the percent of positive statements in birth stories. PHLC scores emerged as a significant predictor of the amount of positive statements women included in their birth stories. No such similar findings were identified for the Internal pain subscale of the BPCQ on this outcome measure. So when women identify the locus of health control as external, i.e. in Powerful others, they are less likely to include positive statements in their birth stories. Women were similarly inclined when they held Positive Attitudes towards Doctors (but not Positive Attitudes towards Medicine). Furthermore, women who held Positive Attitudes towards Doctors also included correspondingly more negative statements in their birth stories. These findings point towards poorer post-natal psychological outcomes for women with an

external locus of control. This is strengthened by the higher scores on the EPDS that women with more Positive Attitudes towards both Doctors and Medicines produced. PAD emerged as a significant predictor of both positive and negative statements in birth stories but was not found to predict EPDS scores. PAM however, did emerge as a significant predictor of scores on the EPDS.

Taken together the findings on issues around control support the vast body of previous research that has identified control as a fundamental concept in childbirth satisfaction and post-natal well-being (Green et al., 1990; Slade et al., 1993; Lavender et al., 1999; McCrea & Wright, 1999; Waldenström, 1999; Waldenström et al., 2004; Green & Baston, 2003; Goodman et al., 2004). Much of this research has studied control using questions devised for the purpose of the research and has focussed on the concept of personal control. Waldenström (1999) included the concept of locus of control in her research, though the measures she used differed to the current study. The concept of locus of control was of particular interest in the current research as it related to issues of the birth plan. Chapters 4 and 9 showed that birth planners tend to have lower internal health locus of control and see doctors as powerful in pain control. This section has discussed that internal control tends to be associated with better post-natal psychological outcomes and external control relates to poorer post-natal outcomes. Differences between birth planners and non-birth planners on post-natal outcome measures were few (section 10.6.1). However the one difference identified was in the amount of positive statements included in the birth story. This outcome measure also produced the most significant number of relationships with control variables, being negatively associated with two external and one internal control measures. Taken together this evidence may suggest that locus of control is a mediating factor in post-natal psychological outcomes between birth planners and non-birth planners. Further investigation is required to test this possibility.

Section 10.8 – Coping and post-natal psychological outcomes

This section considers the five subscales of the Cybernetic Coping Scale (CCS) in relation to the five post-natal psychological outcome measures. Three of the CCS subscales (Accommodation, Devaluation and Symptom Reduction) were not related to any of the five post-natal psychological outcome measures. However, the

Avoidance subscale was positively correlated with the percent of positive statements in women's birth stories and emerged as a significant predictor of this outcome measure. Avoidance coping represents an attempt to direct attention away from the situation (Edwards & Baglioni, 1999) and is considered a less effective, emotion-focussed coping strategy (Edwards, 1992). The diversion of attention away from conflict aims to lessen the adverse impact on well-being (Guppy et al., 2004). Avoidance may therefore initially appear an unexpected coping strategy to be associated with positive outcome measures. However, the inclusion of significantly more positive statements in their birth stories might be a part of these women's strategy for this redirection of focus away from inconsistencies (Guppy et al., 2004). In this sense it might be viewed as a negative outcome rather than a positive and likely to be adopted if other avenues of coping have failed (Edwards, 1992).

Change the Situation, on the other hand, is a form of problem-focussed coping and represents the adaptation of circumstances to meet requirements (Edwards & Baglioni, 1999). This form of coping is generally represented as a more positive approach. It is interesting then that women who scored highly in the Change the Situation subscale and therefore showed a tendency toward that form of coping also scored higher on the EPDS, rated their birth experience lower and worse than their birth expectancies. Change the Situation was also a significant predictor of both EPDS scores and birth experience ratings. Other predictors of EPDS scores included: PAM, which has been identified as being associated with negative post-natal outcomes; medical decisions, which are associated with both positive and negative outcomes but negative in terms of the EPDS; and the Family subscale of the MSPSS, which is associated with positive outcomes. Other predictors of birth experience ratings were: Health knowledge; Significant Other (MSPSS); and Internal pain (BPCQ), which were all positively related to birth experience. Attempts to interpret the findings from the Change the Situation subscale in terms of what else is occurring in post-natal psychological outcomes are therefore problematic. Reliability and validity values for this subscale were good and the scoring was checked and verified as being accurate. The findings show that women who tend to use this problem-focussed form of coping have poorer post-natal psychological outcomes, which cannot be explained in terms of other significantly related variables. This finding warrants further investigation but may arise from the failure of this coping form

in the childbirth context. Edwards (1992) describes problem-focussed coping as an attempt “to change objective reality”. Opportunities to do this in labour and delivery are clearly limited. Therefore women who tend to use this form of coping may suffer as a consequence of its ineffectiveness in childbirth.

Section 10.9 – Social support and post-natal psychological outcomes

This section considers the three subscales from the Multidimensional Scale of Perceived Social Support in relation to the five post-natal psychological outcome measures. The Significant Others subscale had positive associations with birth experience ratings and better birth experiences than expectancies. In addition, women who scored higher on the Significant Other subscale also tended to include more positive statements in their birth stories. Therefore the Significant Others subscale is exclusively associated with positive birth outcomes.

Partner support in childbirth has been identified as contributing to positive birth outcomes (Lavender et al., 1999; Goodman et al., 2004; Dennis & Ross, 2006; Lemola et al., 2007). The lack of partner support has also been associated with negative birth outcomes (Waldenström et al., 2004). Other studies have found no relationship between birth outcomes and partner support (Waldenström, Borg, Olsson, Skold & Wall, 1996; Waldenström, 1999). Redshaw and Henderson (2013) have identified that partner support varies in relation to socio-demographic factors, including levels of deprivation. In the current study, the Significant Others subscale and occupational group were significant predictors of both the positive statements in birth stories and birth experience ratings. This supports Redshaw and Henderson’s (2013) findings and may help explain some of the contradictions in previous findings.

The Family subscale of the MSPSS was negatively associated with EPDS scores. Therefore women who perceived their family support as high tended to score lower on the EPDS. Family was also a significant predictor of EPDS scores. Literature on the effect of family support specifically on post-natal psychological outcomes is limited. However, the findings of the current study support Webster, Nicholas, Velacott, Cridland and Fawcett (2011) who also investigated the effect of family support on EPDS scores. Family support is often considered as part of the general support in childbirth, along with partner and midwife support. Therefore it is generally

considered a positive factor. However, the same cannot be said for the Friends subscale in the current study.

The Friends subscale of the MSPSS was negatively related to the difference between birth expectancies and birth experience. Women whose birth experience was more negative than they had expected scored higher on the Friends subscale. The support of friends in childbirth has been found to contribute to a positive birth experience (Cigoli, Gilli & Saita, 2006; Price, Noseworthy & Thornton, 2007; Webster et al., 2011). However, high perceived support from friends was not associated with any positive post-natal psychological outcome in the current study. The correlation was considered too weak to be entered into a regression analysis. Other predictors of the expectancy/experience difference were age and having sufficient information. It may be that the support of friends is a positive form of social support when it exists in addition to the support of a partner and family. However, when women are younger and perhaps do not have the support from these sources they are more reliant on their friends who alone are not in a position to provide adequate support.

Section 10.10 – Childbirth self-efficacy and post-natal psychological outcomes

This section considers the two subscales from the Childbirth Self-Efficacy Inventory (CBSEI). Outcome-total reflects women's expectations of how their coping in labour and delivery impacts upon the outcome. This subscale was negatively associated with the difference between expectations and experience. Women who had higher expectations of how their coping in childbirth would impact upon the outcome had more negative experiences than they had expected. This finding contrasts with Berentson-Shaw et al. (2009) who also compared the CBSEI subscales with outcome variables. They found that outcome expectancies were positively associated with childbirth satisfaction levels post-natally. Much of the research that has used the CBSEI has focussed on assessing the impact of a particular intervention on childbirth self-efficacy (Ip, Tang & Goggins, 2009; Sun, Hung, Chang & Kuo, 2010; Gau, Chang, Tian & Lin, 2011; Kim & Cheang, 2011; Eom, Kim, Kim, Bang & Chun, 2012; Rahimparvar, Hamzehkhani, Geranmayeh & Rahimi, 2012). Studies that have examined childbirth self-efficacy in relation to post-natal psychological outcomes have tended to use only the efficacy subscales of the measure. Only Berentson-Shaw et al. (2009) and the current study appear to have also examined outcome

expectancies in relation to post-natal psychological outcomes. The difference in results suggests scope for further examination of these concepts. However, one possible explanation may be related to the results from both the coping and control scales. Sections 10.7 and 10.8 discussed how aspects of control and coping are associated with negative post-natal psychological outcomes when they are potentially affected by the unpredictable nature of childbirth. An expectation that the way a woman copes in childbirth will lead to particular outcomes for her may set her up for disappointment if her coping or her childbirth do not occur as anticipated.

The Efficacy-total subscale of the CBSEI measured women's beliefs in their ability to successfully negotiate both active and second-stage labour. This subscale was negatively related to the number of negative statements in women's birth stories. Therefore women who had high childbirth self-efficacy tended to include fewer negative statements in their birth stories. Self-efficacy was not, however a significant predictor of negative statements in birth stories. This finding supports Goutaudier, Séjourné, Rousset, Lami and Chabrol (2012) who also did not identify self-efficacy as a significant predictor of PTSD following childbirth. The association between self-efficacy and positive birth outcomes supports the findings of Berentson-Shaw et al. (2009) and others who have used the Efficacy subscales in relation to post-natal psychological outcomes (Soet et al., 2003).

Section 10.11 – Summary of Chapter 10

Post-natal psychological outcomes were measured in terms of: The percent of positive and negative statements in birth stories; the birth experience rating; the difference between birth expectancy and birth experience ratings; and scores on the EPDS. Some variables tended to be more related to positive psychological post-natal outcomes, such as: Internal health locus of control and pain control; perceived support from significant others and family; and childbirth self-efficacy. These findings supported those from previous studies. However, previous literature produced mixed results for other factors related to positive psychological post-natal outcomes in the current study such as: Birth plan evaluation and avoidance coping. Other factors (ante-natal class attendance, information seeking, and external locus of health and pain control) were more associated with negative psychological post-natal outcomes and reflected findings from previous studies. Previous literature was rather more

mixed on other factors that were related to negative psychological post-natal outcomes in this study (age, parity and problem-focussed coping). Perceived social support from friends and outcome-expectancies were both associated with negative psychological post-natal outcomes, which was in contrast with previous studies. No differences were found between birth planners and non-birth planners and outcomes, or between ethnic groups and outcomes, which reflected findings from previous research. Finally, occupational groups produced mixed results in terms of psychological post-natal outcomes, which was also in line with other studies. Explanations for findings in contrast with past research were explored.

Chapter 11 – Discussion of findings in relation to research question 3

Research question 3 asked: Do women score differently on the scales between pregnancy and the post-natal period and how does this compare with scores from non-pregnant women on the same scales? This chapter considers the results of the analyses relating to this question and how they relate to the existing research in the area.

Section 11.1 – Demographic comparability of the pregnant and non-pregnant samples

This section compares the three common demographic characteristics of the pregnant and non-pregnant samples: Age; occupational group; and ethnicity.

Section 11.1.1 - Age of the pregnant and non-pregnant samples. The non-pregnant comparison sample did not differ significantly from the pregnant sample in terms of age. The comparison sample was on average slightly younger. This is largely due to the different population the sample was taken from. The opportunity sampling of females on a university campus was potentially risky, though effort was made to target females who were older than conventional undergraduates. This resulted in a sample who were on average slightly younger than their counterparts in the pregnant sample but this difference was small enough not to be significantly different. This allowed for reasonably comparisons to be made between the two groups.

Section 11.1.2 – Occupational groups of the pregnant and non-pregnant samples. As a result of the differences in recruitment between the two samples, there were more students in the non-pregnant sample and more white collar and professional workers in the pregnant sample. Numbers of unemployed, homemakers, unskilled and skilled workers were fairly similar between the two samples. Therefore, whilst the differences in occupational groups were not statistically significant, they did exist and should be borne in mind when interpreting differences on the measures in the remainder of this chapter.

Section 11.1.3 – Ethnicity of the pregnant and non-pregnant samples. There were no significant differences in ethnic group between the pregnant and non-pregnant samples. The vast majority of the populations of both samples were white /

white British. As discussed in Section 3.7, this reflects the demographic nature of the area the study was conducted in. However, the non-pregnant sample was recruited from a university campus and consequently represented largely students. Therefore this sample was drawn from a temporary population that would not necessarily reflect the local ethnic composition. However, the non-pregnant comparison sample emerged as more predominantly white / white British than the pregnant sample. This partly reflects the under-representativeness of ethnic minority groups at this institution at the time of data collection (which has and is improving). In addition, the ethnic diversity of the local area has increased over the past decade (Cheshire West and Chester Council, 2010). The data from the non-pregnant sample was collected earlier than the data from the pregnant sample because it was quicker and easier to obtain. This may also account for the insignificant differences identified in terms of the larger number of white / white British in the sample tested earlier.

Section 11.2 – Comparison of scores on the single-item measures between samples and time points

This section considers the scores on the general health status question and the health knowledge question between the non-pregnant comparison sample and the pregnant sample at T1 (pre-natally) and T2 (post-natally).

Section 11.2.1 – General health status and sample / time point differences.

Women in the non-pregnant comparison sample rated their general health status as significantly lower than women in the pregnant sample both during pregnancy and post-natally. Women in the pregnant sample rated their general health status as significantly higher during pregnancy than post-natally. However, this latter finding only produced a very small effect size. The difference between the comparison sample and the pregnant/postnatal sample at both time points was more marked and perhaps surprising given the slight relative youth of the comparison sample. However, women in pregnancy will have likely made an effort to engage in healthy behaviours. The unpleasant symptoms of early pregnancy have passed by the third trimester, during which this data was collected. These factors may have all contributed to the higher health status pregnant women rated themselves at.

The measure itself was potentially problematic due to the number of response options available. The measure ranged from 1 (very poor) to 10 (excellent). Ten

points on a scale is the highest recommended number of options to include in measure items (Gravetter & Forzano, 2012). At this upper limit women may have had difficulty in determining what a seven or eight (for example) represented. Only the anchor points on the scale were labelled with descriptions, the remainder were simply numbered. This was in order that the data could be treated as interval data and analysed using parametric statistics (Langdridge, 2004). However, the way in which a particular number on the scale was represented for some women may have differed to others. Nonetheless, the scope for this variation was the same across the two samples.

Section 11.2.2 – Health knowledge and sample / time point differences.

Women in the non-pregnant comparison sample rated their health knowledge below women in the pregnant/post-natal sample at both time points. Women also considered their health knowledge to be better post-natally than during pregnancy. This small improvement in perceived health knowledge is likely to occur as a consequence of the childbirth experience. This brings with it contact with health professionals who are providing women with information and explanations regarding what is happening to them in labour and delivery. This exposure to information appears to create a sense of improved understanding of health matters in women post-natally. The largest differences on this measure however were between the two samples at both time points. Pregnancy often prompts a woman into information seeking in preparation for childbirth, as discussed in Section 10.5.3. This, in addition to the fractionally older mean age of the pregnant sample, may explain why these women rated their health knowledge better than the non-pregnant women in the comparison sample. The health knowledge measure was constructed in the same format as the general health status measure. Therefore the same limitations as discussed in Section 11.2.1 apply here.

Section 11.3 – Comparison of scores on the Attitudes towards Doctors and Medicines Scale (ADMS) between samples and time points

This section considers scores on the two subscales of the ADMS: Positive Attitudes towards Doctors (PAD); and Positive Attitudes towards Medicine (PAM) between the non-pregnant comparison sample and the pregnant sample at both time points.

Section 11.3.1 - PAD and sample / time point differences. No significant differences were identified in PAD scores between women in the non-pregnant comparison sample and pregnant women at T1. However, women at T2 scored significantly higher on the PAD subscale than they did at T1 and than did women in the non-pregnant comparison sample. It was interesting to note that, despite a range of outcomes and experiences in childbirth, generally women's attitudes towards doctors became more positive post-natally. This suggests that the role of doctors in childbirth is perceived as a positive one by female maternity service users.

Marteau (1990) developed the ADMS on four different groups, two of which were women attending antenatal appointments and medical students. These two groups make effective comparisons with the current study. Interestingly, both the non-pregnant comparison sample and the pregnant/postnatal sample at both time points scored a mean PAD that was higher than the means for both Marteau's (1990) antenatal and student groups. Marteau (1990) collected her data in London some 20 years before the data was collected for the current study. During that time the information age has armed patients with access to resources which have empowered them. This has led to the development of new styles of doctor-patient communication (Ogden, 2012), which may have improved patients perceptions of doctors. In addition, regional variations between London and the North West of England may have also contributed to the higher PAD scores obtained in the current study.

Section 11.3.2 – PAM and sample / time point differences. PAM scores followed the same pattern as PAD scores, with women in the pregnant/post-natal group scoring higher than women in the non-pregnant comparison sample and scoring higher post-natally than during pregnancy. Whilst all of these differences were significant the effect sizes were rather small. Both groups and time points scored higher than pregnant women in Marteau's (1990) study. However, the students in Marteau (1990) scored higher on the PAM subscale than both the non-pregnant comparison sample and pregnant women at T1. Only women at T2 scored higher than Marteau's (1990) student sample. However, given the fact that the students in Marteau's (1990) study were medical students it is unsurprising that their attitude to medicine was comparatively high.

Whilst Marteau's (1990) patients scored lower on PAM than the students, the reverse was true of the current study. Women in pregnancy and the post-natal period rated medicine more positively than the non-pregnant comparison sample. This may reflect the positive regard with which women in this client group hold the medical profession as well as the discipline, a regard which only appears to be strengthened after the childbirth experience.

Section 11.4 – Comparison of scores on the Multidimensional Health Locus of Control scale (MHLC) between samples and time points

This section considers scores from the two subscales of the MHLC (Internal control and Powerful others control) between the non-pregnant comparison sample and the pregnant sample at both time points.

Section 11.4.1 Internal control and sample / time point differences. The Internal control subscale of the MHLC scale revealed no significant difference between the non-pregnant comparison sample and the pregnant sample at either time point. Pregnant women did score significantly higher on Internal control post-natally but with a very small effect size. Internal control scores across both samples and time points were markedly lower than found by Wallston et al. (1978) in the development of the measure. Internal control was associated with positive outcomes for women (as discussed in Section 10.7) so it is interesting to note that internal health locus of control increased post-natally. The impact of childbirth and the appreciation of what they have been able to achieve may have contributed towards an empowerment in women, which shifted their perceived locus of health control more internally.

Section 11.4.2 Powerful others control and sample / time point differences. The Powerful others control subscale produced no significant differences between samples or across time points. Women scored higher on the Powerful others subscale post-natally than during pregnancy. This suggests that women perceived the locus of health control to be more external after childbirth (though not significantly so). This result makes intuitive sense but taken with the corresponding findings from the Internal control subscale the picture becomes less clear. Both the Internal control and the Powerful others control subscale scores increased post-natally. It is possible that these increases were caused by different

mediating effects. Alternatively the issue of control generally may have been more salient to women post-natally, contributing to the small rise in these scores. The Powerful others control scores for the non-pregnant comparison sample were between the pre and post-natal scores on this subscale, suggesting that Powerful others as the external locus of control was not a particular feature of either group. This was further evidenced by the markedly lower scores obtained from both samples and time points on the Powerful others subscale as compared with those reported by Wallston et al. (1978) in the development of the measure.

Section 11.5 – Comparison of scores on the Cybernetic Coping Scale (CCS) short (15 item) version between samples and time points.

This section considers scores from the five subscales of the CCS (Change the Situation, Accommodation, Devaluation, Avoidance and Symptom Reduction) between the non-pregnant comparison sample and the pregnant sample at both time points.

Section 11.5.1 – Change the Situation and sample / time point differences. Women in the non-pregnant comparison sample scored significantly lower on the Change the Situation subscale than did women during pregnancy or post-natally. In addition, women scored significantly higher on the Change the Situation subscale post-natally than they did during pregnancy. As discussed in Section 10.8, this rise did not turn out to be a good thing in terms of post-natal psychological outcomes. Women who scored higher on the Change the Situation subscale tended to use birth plans, make complex decisions for birth, and experience more negative psychological outcomes post-natally. It is interesting to note that scores on this subscale were already significantly higher during pregnancy than for the non-pregnant comparison sample. It is not possible to say definitively whether this difference in problem-focussed coping existed between the samples as a result of pregnancy and childbirth. However, the mean scores on the Change the Situation subscale for the non-pregnant comparison sample in the current study are comparable with those of all four studies reported by Guppy et al. (2004) for this subscale. Therefore, it is a potential cause for concern that women may be adopting an approach to coping in pregnancy that they would not normally place such emphasis on and that ultimately may not be the most appropriate or effective coping

strategy for that situation. As discussed in Section 10.8, the scope for changing the childbirth situation may be limited by events that unfold during labour and delivery. It may be that the current culture of childbirth and the messages it conveys to women are incidentally promoting the adoption of this form of coping. This may have contributed to the perception that women are setting themselves up to fail, as discussed by Kitzinger (1987).

Section 11.5.2 – Accommodation and sample / time point differences. There were no significant differences between samples or time points on the Accommodation subscale. Indeed the means for T1 and T2 were identical and the mean for the non-pregnant comparison sample was slightly higher. The means for the Accommodation subscale was comparable with study 1 in Guppy et al (2004). Study 1 recruited university students, whereas studies 2-4 were conducted using serving police officers, new police recruits and social service employees respectively. This makes study 1 the most comparable to the non-pregnant sample in the current study as this was also predominantly a student sample. Accommodation was associated with the complexity of birth plans but not with any outcome variables and this comparison highlights the stability of the variable and its minimal role in the childbirth context.

Section 11.5.3 – Devaluation and sample / time point differences. Women in the non-pregnant comparison sample scored significantly higher on the Devaluation subscale than pregnant women. No equivalent difference was identified between the non-pregnant comparison sample and T2 data or between the two time points. Women in the non-pregnant comparison sample produced the highest mean on the Devaluation subscale whilst women at T1 produced the lowest. All three Devaluation means in the current study were higher than those found in Guppy et al.'s (2004) four studies, though closest to the mean of the students in study one. Devaluation only featured in the birth planner profile in association with extensive pain control decisions. It was not associated with any post-natal psychological outcomes. Therefore, whilst the Devaluation coping form seems to be adopted to a greater extent than average in both samples in the current study, it does not appear to have a major role in birth planning or outcomes.

Section 11.5.4 – Avoidance and sample / time point differences. Women in the non-pregnant comparison sample scored significantly higher on the Avoidance subscale than did women at T1. There were no significant differences between women in the non-pregnant comparison sample and women at T2, or between the two time points. Mean scores on the Avoidance subscale followed the same pattern as those on the Devaluation subscale, with the non-pregnant comparison sample scoring the highest mean and women at T1 the lowest. Again, all mean scores on the Avoidance subscale were higher than those obtained in Guppy et al.'s (2004) four studies though the students in study 1 were again the closest to the current study's means. The Avoidance subscale did not feature in the birth planner profile but was associated with positive post-natal psychological outcomes. Therefore although Avoidance scores tended to be lower during pregnancy, this form of coping makes a small, non-significant rise at T2 and is related to positive psychological outcomes post-natally. However, the non-pregnant comparison sample scored higher on the Avoidance subscale than pregnant women at both time points, suggesting more focus on this coping form in this sample overall. Section 10.8 discusses how Avoidance coping is not generally considered the most beneficial form of coping (Edwards, 1992) but evidence from the pregnant sample suggests that it can serve a purpose in the childbirth situation, perhaps in the absence of other available options. The benefits of focussing on the Avoidance coping form for the non-pregnant comparison sample are doubtful, especially given that this subscale was their second highest mean coping form.

Section 11.5.5 – Symptom Reduction and sample / time point differences. Patterns for the Symptom Reduction subscale followed those for both the Avoidance and Devaluation subscales. Women in the non-pregnant comparison sample scored significantly higher than women at T1. The non-pregnant comparison sample scored the highest means and the women at T1 scored the lowest. Means on the Symptom Reduction subscale increased slightly at T2 but not significantly. There were also no significant differences between means for the non-pregnant comparison sample and T2. Means for both samples and time points in the current study were comparable with both studies 1 and 3 (students and new police recruits) in Guppy et al. (2004). Symptom Reduction did not feature in the birth planner profile nor was it associated with any post-natal psychological outcome variables. It was the highest scoring

subscale on this scale for the non-pregnant comparison sample, as indeed it was in all four of Guppy et al.'s (2004) studies. It was also the second highest scoring subscale for the pregnant sample at both time points, behind Change the Situation. Change the Situation was the second highest scoring subscale on this scale in all four of Guppy et al.'s (2004) studies. This further highlights the discussed prominence and impact of the Change the Situation subscale in childbirth.

Section 11.6 – Comparison of scores on the Multidimensional Scale of Perceived Social Support (MSPSS) between samples and time points

This section considers scores from the three subscales of the MSPSS (Significant other, Family and Friends) between the non-pregnant comparison sample and the pregnant sample at both time points. The data for all subscales in the MSPSS were analysed using non-parametric tests due to the non-normal distribution of the data (Section 7.6).

Section 11.6.1 – Significant Other and sample / time point differences.

Women in the non-pregnant comparison sample scored significantly lower on the Significant Other subscale than women at both T1 and T2. However, there was no significant difference between the two time points. Scores were comparable with those found for females by Zimet et al. (1988) in the development of this measure. Women in the non-pregnant comparison sample scored slightly lower and women at T1 and T2 scored slightly higher than females in Zimet et al. (1988). The MSPSS was developed on a student population so it might be expected that scores from the non-pregnant comparison sample in the current study might be more in line with those reported in Zimet et al. (1988). However, the higher Significant Other scores obtained from the pregnant sample reflected the increased importance a partner has during pregnancy and early parenthood. Women who scored lower on this subscale were more likely to use a birth plan whereas higher scores on Significant Other were associated with more positive post-natal outcomes.

Section 11.6.2 – Family and sample / time point differences. Scores on the Family subscale of the MSPSS followed the same patterns as those for the Significant Other subscale. Means were significantly lower in the non-pregnant comparison sample than they were at both T1 and T2. However they were not significantly different across the two time points. Mean scores on the Family subscale

once again straddled those found by Zimet et al. (1988) for female students, with women in the non-pregnant comparison sample scoring on average slightly lower and women in the pregnant sample scoring fractionally higher at both time points than Zimet et al.'s (1988) female undergraduates. The actual values reported in Zimet et al (1988) were in fact closer to the pregnant sample in the current study. This suggests that perhaps young women perceive that they receive less support from their family in current times than women did in the 1980's. This may partly be due to the changes that have occurred to the family structure in Britain since that time (Murphy, 2011). Higher scores on the Family subscale were associated with more positive post-natal psychological outcomes.

Section 11.6.3 – Friends and sample / time point differences. Mean scores on the Friends subscale of the MSPSS were not significantly different between samples or time points. They were also lower than those obtained from female students in Zimet et al. (1988). It would be reasonable to expect that a largely student sample might perceive their social support as coming principally from their friends. However, this does not appear to be the case for women in the non-pregnant comparison sample in the current study. However, when reviewing means for this sample, they scored below Zimet et al.'s (1988) female undergraduates on every subscale of the MSPSS. It seems that this sample's perceived social support was generally lower in every respect than Zimet et al. (1988) originally reported. However, it is less surprising that women in the pregnant sample scored lower on the Friends subscale as they have already been identified as perceiving their social support as coming from their Significant Others and Family. Their friends in the pregnancy and childbirth context are taking a comparatively more minor role, though women still perceive a certain amount of social support as deriving from their friends. Higher scores on the Friends subscale were associated with more negative post-natal psychological outcomes.

Section 11.7 – Comparison of scores on the Beliefs about Pain Control Questionnaire (BPCQ) between samples and time points

This section considers scores from the two subscales of the BPCQ (Internal pain control and Powerful Doctors pain control) between the non-pregnant comparison sample and the pregnant sample at both time points.

Section 11.7.1 – Internal pain control and sample / time point differences. No significant differences in Internal pain control were identified between women in the non-pregnant comparison sample and women at T1 or T2. There was also no significant difference between the two time points. The means were lower in the pregnant sample than in the non-pregnant comparison sample and were lower at T2 than T1. Non-pregnant women perceive pain control as slightly (but not significantly) more internally located than pregnant women. Women in pregnancy perceive control of pain to be slightly but not significantly more internally located than they do post-natally. Means for women in the non-pregnant comparison sample on the Internal pain control subscale were very similar to those obtained in the development of the scale on undergraduates and university applicants (Skevington, 1990). The BPCQ was also developed on patients who were either chronically ill or in chronic pain. However, the means for T1 and T2 were also closer to the undergraduate and university applicant groups in Skevington's (1990) findings. Internal pain control was not featured in the birth planner profile or associated with positive or negative post-natal psychological outcomes.

Section 11.7.2 – Powerful Doctors pain control and sample / time point differences. Women in the non-pregnant comparison sample scored significantly lower on the Powerful Doctors pain control subscale than women at either T1 or T2. However, there was no significant difference in Powerful Doctors scores between the two time points. The mean was slightly higher post-natally than in pregnancy for Powerful Doctors pain control but not sufficiently to reach significance. Means from both samples and time points were again most in line with Skevington's (1990) undergraduates and university applicants, though the ovarian cancer patients appeared to score similarly as well. Other cancer patients and those in chronic pain perceived doctors to be more powerful in pain control (Skevington, 1990). In the current study, women perceived doctors to be more powerful in pain control during pregnancy and post-natally than did women who were not pregnant. Women who scored higher on the Powerful Doctors subscale were more likely to use a birth plan. However, Powerful Doctors pain control was not associated with either positive or negative port-natal psychological outcomes.

Section 11.8 – Summary of Chapter 11

Chapter 11 has discussed the results of Chapter 8, which compared the non-pregnant comparison sample with data from women during pregnancy and the post-natal period. It also discusses differences across these two time points. The demographic variables between the two samples were sufficiently similar to draw reasonable comparisons. Women from the non-pregnant comparison sample rated their general health status and health knowledge as poorer than women during pregnancy or post-natally. Non-pregnant women had less positive attitudes towards medicine and tended to avoid problem-focussed forms of coping. Non-pregnant women did not see partners or family as particularly strong sources of social support and did not see doctors as powerful in pain control. Devaluation, avoidance and symptom reduction were the preferred form of coping for this sample. Women felt that their general health status was poorer post-natally than during pregnancy. However, they felt that their health knowledge had improved, their attitudes towards doctors and medicine was more positive, they used more problem-focussed coping and perceived the control of their health to be more internally located.

Chapter 12 – General discussion and conclusions

This final chapter aims to summarise the key findings from this study, to evaluate the method and to state the conclusions drawn on the basis of the findings.

Section 12.1 – Summary of findings

Research question 1 asked: What factors influence women's use of birth plans and what types of decisions are made in them? The comparison of women with and without birth plans on a range of variables identified that birth planners: are younger; do not perceive the locus of health control as internal; use problem-focussed coping forms; perceive lower levels of social support from their significant others; and consider doctors as powerful in pain control (see table 12.1). The most complex birth plans are made by women who: use change the situation or accommodation coping forms; have high outcome expectancies but low self-efficacy for childbirth; and have complex existing medical conditions. The birth plans women make mostly contain decisions regarding the control of pain, particularly for women who have low childbirth self-efficacy and use devaluation as a coping form.

Table 12.1

Summary of differences between women with birth plans and women without birth plans.

Variable	Birth plan	No birth plan
Age	Younger	Older
Internal Health Locus of Control	Lower	Higher
Change the Situation Coping	Higher	Lower
Significant Others Social Support	Lower	Higher
Powerful Doctors Pain Control	Higher	Lower

Research question 2 asked: What are the post-natal psychological outcomes for women based upon social, health and psychological factors, and the existence, nature, complexity and evaluation of birth plans? Women with positive post-natal psychological outcomes: were older, multiparous and from higher occupational groups; valued their birth plans if they made one; felt able to ask questions to their health visitor; had good health knowledge; perceived the locus of health control as internal; adopted avoidant coping forms; perceived their significant others and family as supportive; and had higher levels of childbirth self-efficacy. Women with negative post-natal psychological outcomes: were from lower occupational groups; attended antenatal classes and used birth plans; were satisfied that they could and had accessed information; held positive attitudes towards doctors and medicine; perceived health control to be externally located; used problem-focussed coping forms; were socially supported by friends; had high outcome expectancies for childbirth; and made more decisions for birth (notably pain control, position and environment decisions).

Research question 3 asked: Do women score differently on the scales between pregnancy and the post-natal period and how does this compare with scores from non-pregnant women on the same scales? Women scored higher in the post-natal period than they did in pregnancy on: Health knowledge; Positive Attitudes towards Doctors and Medicines, the Change the Situation coping form and Internal locus of health control. However, women rated their general health status lower post-natally than they had done during pregnancy. Pregnant women scored higher than non-pregnant women on: General health status, health knowledge, Positive Attitudes towards Medicine; the Change the Situation coping form; Significant Other and Family social support; and Powerful Doctors pain control. However, the pregnant women scored lower than non-pregnant women on the coping forms: Devaluation, Avoidance; and Symptom Reduction. Non-pregnant women scored lower than women in the post-natal period on: General health status and health knowledge; Positive Attitudes towards Doctors and Medicine; the Change the Situation coping form; Significant Other and Family social support; and Powerful Doctors pain control.

A summary of key variables implicated in birth planning and outcomes are given in table 12.2

Table 12.2

Summary of key variables implicated in birth planning and outcomes

Variable	Birth planning	Outcomes
Age	✓	✓
Parity		✓
Occupational group		✓
Antenatal education		✓
Birth planning		✓
Medical conditions	✓	
Health knowledge		✓
Attitudes		✓
Control	✓	✓
Coping	✓	✓
Social support	✓	✓
Pain control	✓	
Outcomes		
Self-efficacy	✓	✓

Section 12.2 - Implications for theory and practice

The ‘one size fits all’ approach to birth planning would not seem to be the most useful based on the findings presented in this thesis. For some women with particular social and psychological characteristics birth plans are a valuable tool in labour and delivery and the outcomes experienced are positive. However, this research has not only shown that this is not always the case, but identified the social and psychological conditions under which birth planning is implicated in more negative outcomes. Birth plans therefore seem to work differently for different women and with contrasting outcomes. These findings echo those of Thomson, Dykes, Singh, Cawley and Dey (2013) who reported similar issues with antenatal care more generally.

The findings from this research are potentially useful in midwifery practice in terms of highlighting possible risk factors for post-natal distress. It also identifies characteristics in women for whom birth planning may be valuable and factors that indicate when it might be less beneficial. In practice it may be more appropriate for midwives to allow time to develop a relationship with the women in their care before encouraging plans for childbirth. This would enable them to informally assess the presence of such indicators, many of which could be detected during routine consultations (high outcome expectations for childbirth, for example). Raising awareness of these issues in midwifery training could equip midwives with the skills and knowledge to place appropriate emphasis on planning for birth in each case.

In 2014 a report on the costs of perinatal mental health problems, commissioned by the Maternal Mental Health Alliance, was published (Bauer, Parsonage, Knapp, Iemmi & Adelaja, 2014). The key finding that perinatal mental illness costs the UK £8.1 billion each year attracted media attention and prompted the Health Minister to announce mental health training for all midwives. Perinatal mental health problems are estimated to affect around 20% of women during pregnancy and/or the post-natal period (Bauer et al., 2014). Therefore developing psychological awareness and skills in midwives will not only benefit this 20% but also the other 80% as well. This majority group may be entirely unaffected by perinatal mental illness but it may also include a sub-clinical group who do not meet diagnostic criteria but who are nevertheless in some degree of psychological distress. These women may ultimately be helped by a midwife who has received a psychological component to their training

and is consequently more alert to the issues. In midwifery training, students are taught about the normal birth before they are introduced to deviations from this. Likewise, in psychology an understanding of normal behaviour provides the basis for models of mental illness. Therefore if midwives are equipped with such insights into normal human behaviour then the benefits to all women in their care can potentially be enhanced, regardless of levels of psychological distress.

A broad range of measures and approaches were adopted in this research, some of which emerged as central constructs in birth planning and outcomes. The concept of locus of health control was pivotal in addressing each of the research questions, which concurs with existing literature in the field. Locus of health control featured as a concept in the Multidimensional Health Locus of Control scale, the Beliefs about Pain Control Questionnaire and the Attitudes towards Doctors and Medicines Scale.

Coping forms also recurred as a key concept through the findings. Whilst this is an intuitively fitting finding, the measure adopted has not been used with this population before and some of the main findings were actually counter-intuitive. This gave rise to some interesting discussions around what are commonly considered effective coping forms and why these were implicated in negative psychological post-natal outcomes. As explained in the Rationale (Section 1.3), the inclusion of the coping variable was a new development in this study as previous research in this field does not directly measure this construct. Its inclusion was based on evidence more from the clinical setting than empirical but it emerged as a valuable consideration that illuminated the findings across the board. The intriguing nature of some of the coping results seem worthy of fuller exploration. Future research into why different coping forms may be associated with different experiences and outcomes would develop this new area further.

Social support is also highlighted in the literature as an important factor in birth experience (Waldenström, 1999; Beck, 2001; Castle et al., 2008). This research measured perceived social support from three sources: Family; friends; and significant others. This construct also featured strongly in the findings with women with less social support from closer sources tending to use birth plans more and experience more negative psychological post-natal outcomes. These findings therefore supported evidence on social support in existing literature.

The final construct of note in birth planning and outcomes to emerge from this research is childbirth self-efficacy. The Childbirth Self-Efficacy Inventory measured both childbirth self-efficacy and outcome expectations for childbirth. These concepts were identified in birth plan complexity and psychological post-natal outcomes as contributing to different experiences. Childbirth self-efficacy itself was linked with positive psychological post-natal outcomes whilst high outcome expectations for childbirth were linked with greater complexity in birth plans and more negative psychological post-natal outcomes.

Some of these key constructs may be easier to detect in practice than others. A lack of close social support, little confidence in childbirth ability or unrealistic expectations of the experience may emerge during routine antenatal care. Locus of control and coping forms are likely to be less accessible. However their associations with other, more explicit factors may allow for some degree of prediction.

Section 12.3 – Evaluation and limitations

At the inception of the current research the aim was to test a model of the variables included and their impact on decision making in pregnancy. As the research developed it became clear that this would not be feasible with the sample size. Consequently the model was broken down into the three research questions addressed in this thesis. Had the aims not shifted slightly in this way and the research questions been explicit from the outset, the variables included may have been reduced. The number of variables at times made the process of conveying the story of the research challenging. However, the research has been successful in answering the three research questions and has made an original contribution to the body of knowledge in this area in the following ways. It has used robust and widely utilized measures that can be applied to general populations to identify factors that are related to decision making for childbirth. The advantage of this is that comparisons can be made with non-pregnant women in a way that using a measure designed specifically for use in pregnancy would preclude. Therefore it is possible to establish how such variables change between pregnant and non-pregnant samples and from pregnancy to post-partum. In addition, other research in the area has investigated a small number of variables in relation to either pregnancy or the post-partum. The current research however, has taken a more comprehensive approach

with the aim of giving a more rounded picture of the psychological factors in decision making for pregnancy and their consequences post-natally.

The methodological approach adopted in this research, a cross-sectional survey design, was effective in obtaining measurements of the various factors under investigation in relation to the research questions. However, it is acknowledged that these factors were identified by the researcher as of importance in women's childbirth choices, based upon evidence from previous literature. Furthermore, the instruments selected to measure these factors placed further restrictions on the angle taken to these concepts, and the range of response options available. It may be the case that asking women what they considered to be important influences in their childbirth choices may produce somewhat different constructs to those included here. However, the selection of variables in this research can be partly justified by the fact that the literature search that informed it included qualitative as well as quantitative studies. Therefore the evidence for the relevance of at least some of these variables will have been generated from approaches where the potential response options for participants are unlimited and can therefore be said to be participant-driven rather than researcher-driven.

The two samples recruited to this research were drawn from different populations. The women in the pregnant / post-natal sample were recruited by community midwives during antenatal appointments at children's centres. Five children's centres were initially approached with varying degrees of success. Some midwives proved to be instrumental and were very engaged with the research. An effective working relationship was established with them quite quickly and despite their busy workloads they were in regular contact and distributed large numbers of questionnaires appropriately. In other cases more reminders and prompting was required, particularly early on in establishing the research practice. However, towards the end of the data collection period the process was also flowing more smoothly in these centres. Unfortunately, the fifth children's centre did not manage to recruit anyone to the research.

All of the midwives involved in the study were briefed on recruitment criteria and protocol and therefore would have ideally been issuing the packs containing the participant information sheet, consent form, questionnaire and pre-paid envelope to a

range of women attending clinic after 28 weeks gestation. However, there is no way of verifying that this actually happened as it was beyond the researcher's capacity to spend large amounts of time in children's centres over a period of more than two years. Therefore there may have been inadvertent or well-meaning bias in the sample recruited.

The comparison sample was also not without problems. A convenience sample was recruited based upon a largely student population, which could have created fundamental differences affecting the comparability of the two groups. However, a deliberate attempt was made to target older women than conventional undergraduates and this resulted in no significant difference in the ages of the two groups. The size of the two samples was different, however. The comparison sample was recruited first and involved several research assistants, all working to the same protocol. When completed data sets were pooled the target had been overshot by 20 participants. However there were no criteria for eliminating any particular data sets, therefore the decision was made to retain them all for analysis.

Attempts were made to minimise the number of items and subscales in the questionnaires where possible, by omitting opposite constructs or those that were less relevant, for example. However, the questionnaires were still lengthy, particularly that used at T1. This may have affected recruitment and retention to the study and those who did complete participation may have experienced fatigue, affecting the quality of their responses. The standardised measures used in the questionnaires have produced some interesting results. However, some of the single item measures and those created for the purpose of this research made less of an impact overall. With this hindsight it may have been better to focus on the established measures, reducing the overall number of variables without detracting from the key findings.

One key result of the need to restrict the number of variables was that whilst post-natal depression was measured, ante-natal depression was not, and neither was anxiety. As anxiety and depression are co-morbid it is usual practice to measure them together. The decision to focus on post-natal depression was as a consequence of the role of the EPDS in the current study as one of several measures of post-natal psychological outcomes. Post-natal depression in itself was deliberately not a key consideration in order that the research did not become overly

clinical and lose its primary focus. If post-natal depression had been considered as anything other than one of the psychological post-natal outcome variables (i.e. if it had been considered in the same way as control, coping, social support, etc.) then it would have followed that ante-natal depression would have needed to be measured as well. Likewise, placing a clinical emphasis on ante- and post-natal depression would have given rise to the need to also measure anxiety at both time points. In addition to creating an additional three variables, this would have resulted in the research acquiring a rather different nature than intended. It is however acknowledged that, though deemed beyond the scope of the current research, there is potential for future research in including ante- and post-natal measures of both anxiety and depression in order to obtain a fuller picture of psychological well-being at both time points.

The birth plans and birth stories added a richer dimension to the data. They varied in length and detail and were generally not substantial enough to conduct any type of qualitative analysis on. The content analysis was conducted with the use of pre-defined codes and inter-rater reliability was established to help to verify the robustness of these. However, analysis of birth stories in particular was challenging as it required a judgement regarding the valence of the content. Whilst the coding guide (Appendix I) aided the decisions regarding content valence, the question remains as to whether that item did actually represent a positive or negative (or neutral) event for that woman. The codes were defined based on the literature surrounding normal birth but it is acknowledged that they were vulnerable to a degree of subjectivity. Additionally events may have been context dependent and what might appear a negative event in isolation may contribute to something positive and thus be perceived as such in the experience and the memory of it.

Finally, the timescale of this research has at times impacted upon the consistency of performance. For example, the process of applying for ethical approval was lengthy and time consuming. During this time the practice of women being seen by midwives for antenatal check-ups at their doctor surgery's was replaced with their transfer to the newly created children's centres. Therefore time was wasted trying to negotiate access via practice managers early on when by the time ethical approval had been granted the antenatal clinics had all moved out. Maintaining an overview of the data collection and management was also time-consuming and at times frustrating. The

ultimate challenge, however, lay in the representation and communication of such a large volume of data when the attention it could be afforded was often sporadic.

Section 12.4 - Conclusions

The use of birth plans has been described as controversial (Too, 1996b; Kitzinger, 1999). This research has shown that their value and applications are complex and circumstantial. Childbirth does not go 'wrong' simply by virtue of women making decisions about what they want in advance of the event. Women in the current study who used birth plans did experience significantly more negative psychological post-natal outcomes than women without birth plans. However, women who valued their birth plans highly experienced significantly more positive psychological post-natal outcomes. Therefore for some women at least birth plans seem to have been an integral element of the experience. This research has highlighted some key factors that are associated with either positive or negative psychological post-natal outcomes for women. Women from professional / managerial occupational groups, with an external health locus of control, an avoidant coping style, perceived social support from family and partner, and high childbirth self-efficacy had more positive psychological post-natal outcomes. Conversely, women of lower occupational groups, with an internal health locus of control, a problem-focussed coping style, perceived social support from friends, and high outcome expectancies for childbirth experience more negative psychological post-natal outcomes.

Clearly every woman should have the right to the birth they want and be given the opportunity to make as many plans as they feel they need. Planning for care in childbirth is encouraged in the same way as is planning for care in other health scenarios. Patient involvement in decision making has become established as the norm in negotiating health care in modern Britain. However, whilst this practice is often effective and empowering in a range of settings, childbirth is different. Childbirth is unpredictable, individual, and emotional. It involves the simultaneous care of two people, often neither of whom are ill. It is the unique nature of these circumstances that mean that the care often needs to be more idiosyncratic. A more flexible, tailored approach to birth planning may maximize the opportunity for a more positive birth experience for more women. The findings from this research should not be taken as evidence that birth plans do not 'work', rather, a blanket approach either for or

against birth plans is perhaps not the most useful way of empowering women to make choices for childbirth.

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Appendix A – Summary of demographic data across samples

Table A.1

Summary of demographic data across samples

Demographic	Pregnant sample		Comparison sample	
	Mean	SD	Mean	SD
Age (years)	29.1	5.71	27.91	10.86
	Frequency	%	Frequency	%
Occupation				
Unemployed	2	1.7	4	2.9
Student	11	9.2	71	50.7
Homemaker	18	15.0	10	7.1
Unskilled worker	11	9.2	11	7.9
Skilled worker	5	4.2	9	6.4
White-collar worker	41	34.2	21	15.0
Professional	32	26.7	14	10.0
Ethnic group				
White / white British	100	83.3	137	97.9
Black / black British	1	0.8	0	0
Asian / Asian British	11	9.2	1	0.7
Mixed	2	1.7	0	0
Other	5	4.2	2	1.4
Declined to answer	1	0.8	0	0

Appendix B – Pre-natal questionnaire

I.D…….

University of Chester, Department of Psychology

Women's approach to and experience of birth

Section A. This section asks general details about you.

1. Please tell us your age……years.
2. How many times have you given birth before?.....times.
3. How would you describe your occupation? (Please also tell us if you look after the home/family, are a student, retired, unemployed or other).
4. How would you describe your ethnic group?
5. Have you, or do you plan to attend an ante-natal or childbirth education class?

   Yes / no (circle as appropriate)
6. Have you, or do you plan to complete a birth plan?

   Yes / no (circle as appropriate)
7. Do you have any existing medical conditions that may affect your birth? Please list
   ……
   ……
   ……
   ……

Section B. This section relates to your general health.

Please rate on a scale of 1 – 10 how good you consider your general health to be, where 1 = very poor and 10 = excellent.

1 2 3 4 5 6 7 8 9 10

Circle appropriate response.

Section C. This section relates to your health knowledge.

Please rate on a scale of 1 – 10 how good you consider your health knowledge to be, where 1 = very poor and 10 = excellent.

1 2 3 4 5 6 7 8 9 10

Circle appropriate response.

Please indicate, by circling the appropriate response on the following scales, to what extent you agree or disagree with these statements:

1. I have been given sufficient information to make informed choices about my labour and delivery.

   Strongly Disagree | disagree | neither agree nor disagree | agree | strongly agree

2. I know where and how to find the information I need to help me prepare for the birth of my baby.

   Strongly Disagree | disagree | neither agree nor disagree | agree | strongly agree

3. I feel able to ask questions when I see my midwife.

   Strongly Disagree | disagree | neither agree nor disagree | agree | strongly agree

Section D. Attitudes towards doctors and medicine.

Below are written a series of statements concerning attitudes towards doctors and medicine. Please read through them carefully and put a circle around one of the numbers under each statement to show how strongly you agree or disagree with it using the scale below. There are no right or wrong answers.
Scale:
1 = strongly disagree
2 = moderately disagree
3 = slightly disagree
4 = slightly agree
5 = moderately agree
6 = strongly agree

1. All doctors are good doctors.

   1 2 3 4 5 6

2. Medicine is based on scientific principles.

   1 2 3 4 5 6

3. I have absolute faith and confidence in all hospital doctors.

   1 2 3 4 5 6

4. The improved health of the nation is due to effective medicine.

   1 2 3 4 5 6

5. No matter how long you have to wait to see a doctor, it's worth it.

   1 2 3 4 5 6

6. Medicine has cures for most diseases.

   1 2 3 4 5 6

7. Doctors know what's best for you.

   1 2 3 4 5 6

8. Medicine is the best profession a person can have.

   1 2 3 4 5 6

Section E. Control

This section is about the way in which people view certain important health-related issues. Please read each item carefully and circle one of the numbers below each statement to show how strongly you agree or disagree with it using the scale below. There are no right or wrong answers.
Scale:
1 = strongly disagree
2 = moderately disagree
3 = slightly disagree
4 = slightly agree
5 = moderately agree
6 = strongly agree

1. If I get sick, it is my own behaviour which determines how soon I get well again.

   1 2 3 4 5 6

2. Having regular contact with my doctor is the best way for me to avoid illness.

   1 2 3 4 5 6

3. Whenever I don't feel well I should consult a medically trained professional.

   1 2 3 4 5 6

4. I am in control of my health.

   1 2 3 4 5 6

5. My family has a lot to do with my becoming sick or staying healthy.

   1 2 3 4 5 6

6. When I get sick, I am to blame.

   1 2 3 4 5 6

7. Health professional control my health.

   1 2 3 4 5 6

8. The main thing which affects my health is what I myself do.

   1 2 3 4 5 6

9. If I take care of myself I can avoid illness.

   1 2 3 4 5 6

10. When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.

    1 2 3 4 5 6

11. If I take the right actions I can stay healthy.

    1 2 3 4 5 6

12. Regarding my health, I can only do what my doctor tells me to do.

    1 2 3 4 5 6

Section F. Coping

The questions below are concerned with how you generally cope with problems in your life. Please circle the number corresponding to your response to the following questions using the scale:
1 = never
2 = rarely
3 = sometimes
4 = often
5 = always

1. I try to change the situation to get what I want.

   1 2 3 4 5

2. I make an effort to change my expectations.

   1 2 3 4 5

3. I tell myself the problem was unimportant.

   1 2 3 4 5

4. I try to keep myself from thinking about the problem.

   1 2 3 4 5

5. I try to let off steam.

   1 2 3 4 5

6. I focus my efforts on changing the situation.

   1 2 3 4 5

7. I try to adjust my expectations to meet the situation.

   1 2 3 4 5

8. I tell myself the problem wasn't so serious after all.

   1 2 3 4 5

9. I try to avoid thinking about the problem.

   1 2 3 4 5

10. I try to relieve my tension somehow.

    1 2 3 4 5

11. I work on changing the situation to get what I want.

1 2 3 4 5

12. I try to adjust my own standards.

1 2 3 4 5

13. I tell myself that the problem wasn't such a big deal after all.

1 2 3 4 5

14. I try to turn my attention away from the problem.

1 2 3 4 5

15. I try to get it off my chest.

1 2 3 4 5

Section G. Social support

The following questions are about who you rely on for support. Please respond by circling the appropriate number below each question using the scale:
1 = very strongly disagree
2 = strongly disagree
3 = disagree
4 = neither disagree nor agree
5 = agree
6 = strongly agree
7 = very strongly agree

1. There is a special person who is around when I am in need.

1 2 3 4 5 6 7

2. There is a special person with whom I can share my joys and sorrows.

1 2 3 4 5 6 7

3. My family really tries to help me.

1 2 3 4 5 6 7

4. I get the emotional help and support I need from my family.

1 2 3 4 5 6 7

5. I have a special person who is a real source of comfort to me.

   1 2 3 4 5 6 7

6. My friends really try to help me.

   1 2 3 4 5 6 7

7. I can count on my friends when things go wrong.

   1 2 3 4 5 6 7

8. I can talk about my problems with my family.

   1 2 3 4 5 6 7

9. I have friends with whom I can share my joys and sorrows.

   1 2 3 4 5 6 7

10. There is a special person in my life who cares about my feelings.

    1 2 3 4 5 6 7

11. My family is willing to help me make decisions.

    1 2 3 4 5 6 7

12. I can talk about my problems with my friends.

    1 2 3 4 5 6 7

Section H. Pain control

Here are some opinions which people sometimes hold about pain. I would like you to read them carefully and show how much you agree or disagree with each one by circling one of the numbers below each question using the scale below. There are no right or wrong answers.
1 = strongly disagree
2 = disagree
3 = mildly disagree
4 = mildly agree
5 = agree
6 = strongly agree

1. If I take good care of myself I can usually avoid pain.

   1 2 3 4 5 6

2. Whether or not I am pain in the future depends on the skill of the doctors.

   1 2 3 4 5 6

3. Whenever I am in pain, it is usually because of something I have done or not done.

   1 2 3 4 5 6

4. Whether I am in pain depends on what the doctors do for me.

   1 2 3 4 5 6

5. I cannot get any help for my pain unless I go to seek medical help.

   1 2 3 4 5 6

6. When I am in pain I know that it is because I have not been taking proper exercise or eating the right food.

   1 2 3 4 5 6

7. People's pain results from their own carelessness.

   1 2 3 4 5 6

8. I am directly responsible for my pain.

   1 2 3 4 5 6

9. Relief from pain is chiefly controlled by the doctors.

   1 2 3 4 5 6

Section I. Birth expectancies

Please rate on the scale below *how positive you expect your birth experience to be.* Please circle the number that best corresponds with your expectations.

1	2	3	4	5
very negative	negative	neither negative nor positive	positive	very positive

Section J. Birth plans

If you have made any decisions about what you would like to happen during your labour/delivery (e.g. pain control, positions, environment, support, etc.), please state these below. If you are having a planned caesarean, please tell us about the decisions surrounding that.

……

……

……

……

……

……

……

……

……

……

……

……

Please feel free to continue on a separate sheet if necessary.

Please give your baby's due date:……...

Name of midwife:……

Section K. Childbirth self-efficacy

Part 1 – think about how you imagine labour will be and feel when you are having contractions 5 minutes apart or less. For each of the following behaviours, indicate how helpful you feel the behaviour could be in helping you cope with this part of labour by circling a number between 1 (not at all helpful) and 10 (very helpful).

1. Relax my body.

1 2 3 4 5 6 7 8 9 10

2. Get ready for each contraction.

1 2 3 4 5 6 7 8 9 10

3. Use breathing during labour contractions.

1 2 3 4 5 6 7 8 9 10

4. Keep myself in control.

1 2 3 4 5 6 7 8 9 10

5. Think about relaxing.

1 2 3 4 5 6 7 8 9 10

6. Concentrate on an object in the room to distract myself.

1 2 3 4 5 6 7 8 9 10

7. Keep myself calm.

1 2 3 4 5 6 7 8 9 10

8. Concentrate on thinking about the baby.

1 2 3 4 5 6 7 8 9 10

9. Stay on top of each contraction.

1 2 3 4 5 6 7 8 9 10

10. Think positively.

1 2 3 4 5 6 7 8 9 10

11. Not think about the pain.

1 2 3 4 5 6 7 8 9 10

12. Tell myself that I can do it.

1 2 3 4 5 6 7 8 9 10

13. Think about others in my family.

1 2 3 4 5 6 7 8 9 10

14. Concentrate on getting through one contraction at a time.

1 2 3 4 5 6 7 8 9 10

15. Listen to encouragement from the person helping me.

1 2 3 4 5 6 7 8 9 10

Continue to think about how you imagine labour will be and feel when you are having contractions 5 minutes apart or less. For each behaviour, indicate how certain you are of your ability to use the behaviour to help you cope with this part of labour by circling a number between 1 (not at all sure) and 10 (completely sure).

16. Relax my body.

1 2 3 4 5 6 7 8 9 10

17. Get ready for each contraction.

1 2 3 4 5 6 7 8 9 10

18. Use breathing during labour contractions.

1 2 3 4 5 6 7 8 9 10

19. Keep myself in control.

1 2 3 4 5 6 7 8 9 10

20. Think about relaxing.

1 2 3 4 5 6 7 8 9 10

21. Concentrate on an object in the room to distract myself.

1 2 3 4 5 6 7 8 9 10

22. Keep myself calm.

1 2 3 4 5 6 7 8 9 10

23. Concentrate on thinking about the baby.

1 2 3 4 5 6 7 8 9 10

24. Stay on top of each contraction.

1 2 3 4 5 6 7 8 9 10

25. Think positively.

1 2 3 4 5 6 7 8 9 10

26. Not think about the pain.

1 2 3 4 5 6 7 8 9 10

27. Tell myself that I can do it.

1 2 3 4 5 6 7 8 9 10

28. Think about others in my family.

1 2 3 4 5 6 7 8 9 10

29. Concentrate on getting through one contraction at a time.

1 2 3 4 5 6 7 8 9 10

30. Listen to encouragement from the person helping me.

1 2 3 4 5 6 7 8 9 10

Part II – think about how you imagine labour will be and feel when you are pushing your baby out to give birth. For each of the following behaviours, indicate how helpful you feel the behaviour could be in helping you cope with this part of labour by circling a number between 1 (not at all helpful) and 10 (very helpful).

31. Relax my body.

1 2 3 4 5 6 7 8 9 10

32. Get ready for each contraction.

1 2 3 4 5 6 7 8 9 10

33. Use breathing during labour contractions.

1 2 3 4 5 6 7 8 9 10

34. Keep myself in control.

1 2 3 4 5 6 7 8 9 10

35. Think about relaxing.

1 2 3 4 5 6 7 8 9 10

36. Concentrate on an object in the room to distract myself.

1 2 3 4 5 6 7 8 9 10

37. Keep myself calm.

1 2 3 4 5 6 7 8 9 10

38. Concentrate on thinking about the baby.

1 2 3 4 5 6 7 8 9 10

39. Stay on top of each contraction.

1 2 3 4 5 6 7 8 9 10

40. Think positively.

1 2 3 4 5 6 7 8 9 10

41. Not think about the pain.

1 2 3 4 5 6 7 8 9 10

42. Tell myself that I can do it.

1 2 3 4 5 6 7 8 9 10

43. Think about others in my family.

1 2 3 4 5 6 7 8 9 10

44. Concentrate on getting through one contraction at a time.

1 2 3 4 5 6 7 8 9 10

45. Focus on the person helping me in labour.

1 2 3 4 5 6 7 8 9 10

46. Listen to encouragement from the person helping me.

1 2 3 4 5 6 7 8 9 10

Continue to think about how you imagine labour will be and feel when you are pushing your baby out to give birth. For each behaviour, indicate how certain you are of your ability to use the behaviour to help you cope with this part of labour by circling a number between 1 (not at all sure) and 10 (completely sure).

47. Relax my body.

1 2 3 4 5 6 7 8 9 10

48. Get ready for each contraction.

1 2 3 4 5 6 7 8 9 10

49. Use breathing during labour contractions.

1 2 3 4 5 6 7 8 9 10

50. Keep myself in control.

1 2 3 4 5 6 7 8 9 10

51. Think about relaxing.

1 2 3 4 5 6 7 8 9 10

52. Concentrate on an object in the room to distract myself.

1 2 3 4 5 6 7 8 9 10

53. Keep myself calm.

1 2 3 4 5 6 7 8 9 10

54. Concentrate on thinking about the baby.

1 2 3 4 5 6 7 8 9 10

55. Stay on top of each contraction.

1 2 3 4 5 6 7 8 9 10

56. Think positively.

1 2 3 4 5 6 7 8 9 10

57. Not think about the pain.

1 2 3 4 5 6 7 8 9 10

58. Tell myself that I can do it.

1 2 3 4 5 6 7 8 9 10

59. Think about others in my family.

1 2 3 4 5 6 7 8 9 10

60. Concentrate on getting through one contraction at a time.

1 2 3 4 5 6 7 8 9 10

61. Focus on the person helping me in labour.

1 2 3 4 5 6 7 8 9 10

62. Listen to encouragement from the person helping me.

1 2 3 4 5 6 7 8 9 10

This is the end of the questionnaire. Please return it and your completed consent form in the envelope provided, retaining the participant information. Many thanks for your participation.

Appendix C – Post-natal questionnaire

I.D…….

University of Chester, Department of Psychology
Women's approach to and experience of birth

Dear Participant

Thank you for completing the first questionnaire of this study – your responses are most valuable.

This mailing forms the second part of the study. I would be grateful if you could complete it and return in the enclosed sae as before. This will then end your involvement in the study.

Section A. This section asks about your experience of birth

Please rate on the scale below *how positive you found your birth experience to be.* Please circle the number that best corresponds with your expectations.

1	2	3	4	5
very negative	negative	neither negative nor positive	positive	very positive

Section B. This section asks about how useful you found your birth plan

If you did not complete a birth plan, please skip this section and go to Section C.

a) Please rate on the scale below *how useful you found your birth plan to be during labour and delivery.* Please circle the number that best corresponds with your evaluation.

1	2	3	4
completely useless	somewhat useless	somewhat useful	very useful

b) Please rate on the scale below *how much you feel your birth plan was adhered to.* Please circle the number that best corresponds with your estimation.

1	2	3	4
completely ignored	somewhat ignored	somewhat adhered to	very much adhered to

Section C. Your birth story

Please explain briefly in your own words the story of your labour and delivery.

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Please feel free to continue on an additional sheet if necessary.

Section D. This section asks about how you feel

Please circle the letter against the answer which comes closest to how you have felt *in the past 7 days,* not just how you feel today.

1. I have been able to laugh and see the funny side of things:
    a) as much as I always could
    b) not quite so much now
    c) definitely not so much now
    d) not at all

2. I have looked forward with enjoyment to things:
    a) as much as I ever did
    b) rather less than I used to
    c) definitely less than I used to
    d) hardly at all

3. I have blamed myself unnecessarily when things went wrong:
    a) yes, most of the time
    b) yes, some of the time
    c) not very often
    d) no, never

4. I have been anxious or worried for no good reason:
    a) no, not at all
    b) hardly ever
    c) yes, sometimes
    d) yes, very often

5. I have felt scared or panicky for not very good reason:
    a) yes, quite a lot
    b) yes, sometimes
    c) no, not much
    d) no, not at all

6. Things have been getting on top of me:
    a) yes, most of the time I haven't been able to cope at all
    b) yes, sometimes I haven't been coping as well as usual
    c) no, most of the time I have coped quite well
    d) no, I have been coping as well as ever

7. I have been so unhappy that I have had difficulty sleeping:
    a) yes, most of the time
    b) yes, sometimes
    c) not very often
    d) no, not at all

8. I have felt sad or miserable:
    a) yes, most of the time
    b) yes, quite often
    c) not very often
    d) no, not at all

9. I have been so unhappy that I have been crying:
    a) yes, most of the time
    b) yes, quite often
    c) only occasionally
    d) no, never

10. The thought of harming myself has occurred to me:
    a) yes, quite often
    b) sometimes
    c) hardly ever
    d) never

Section E. This section relates to your general health

Please rate on a scale of 1 – 10 how good you consider your general health to be, where 1 = very poor and 10 = excellent.

1 2 3 4 5 6 7 8 9 10

Circle appropriate response.

Section F. This section asks about your health knowledge

Please rate on a scale of 1 – 10 how good you consider your health knowledge to be, where 1 = very poor and 10 = excellent.

1 2 3 4 5 6 7 8 9 10

Circle appropriate response.

Please indicate, by circling the appropriate response on the following scales, to what extent you agree or disagree with these statements:

1. I was given sufficient information to make informed choices about my labour and delivery.

Strongly Disagree	disagree	neither agree nor disagree	agree	strongly agree

2. I know where and how to find the information I need to help me to care for my baby.

Strongly Disagree	disagree	neither agree nor disagree	agree	strongly agree

3. I feel able to ask questions when I see my health visitor.

Strongly Disagree	disagree	neither agree nor disagree	agree	strongly agree

Section G. Attitudes towards doctors and medicine.

Below are written a series of statements concerning attitudes towards medicine and doctors. Please read through them carefully and put a circle around one of the numbers under each statement to show how strongly you agree or disagree with it using the scale below. There are no right or wrong answers.

Scale:
1 = strongly disagree
2 = moderately disagree
3 = slightly disagree
4 = slightly agree
5 = moderately agree
6 = strongly agree

1. All doctors are good doctors.

   1 2 3 4 5 6

2. Medicine is based on scientific principles.

   1 2 3 4 5 6

3. I have absolute faith and confidence in all hospital doctors.

   1 2 3 4 5 6

4. The improved health of the nation is due to effective medicine.

   1 2 3 4 5 6

5. No matter how long you have to wait to see a doctor, it's worth it.

   1 2 3 4 5 6

6. Medicine has cures for most diseases.

1 2 3 4 5 6

7. Doctors know what's best for you.

1 2 3 4 5 6

8. Medicine is the best profession a person can have.

1 2 3 4 5 6

Section H. Control

This section is about the way in which people view certain important health-related issues. Please read each item carefully and circle one of the numbers below each statement to show how strongly you agree or disagree with it using the scale below. There are no right or wrong answers.

Scale:
1 = strongly disagree
2 = moderately disagree
3 = slightly disagree
4 = slightly agree
5 = moderately agree
6 = strongly agree

1. If I get sick, it is my own behaviour which determines how soon I get well again.

   1 2 3 4 5 6

2. Having regular contact with my doctor is the best way for me to avoid illness.

   1 2 3 4 5 6

3. Whenever I don't feel well I should consult a medically trained professional.

   1 2 3 4 5 6

4. I am in control of my health.

   1 2 3 4 5 6

5. My family has a lot to do with my becoming sick or staying healthy.

   1 2 3 4 5 6

6. When I get sick, I am to blame.

   1 2 3 4 5 6

7. Health professionals control my health.

   1 2 3 4 5 6

8. The main thing which affects my health is what I myself do.

   1 2 3 4 5 6

9. If I take care of myself I can avoid illness.

   1 2 3 4 5 6

10. When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.

    1 2 3 4 5 6

11. If I take the right actions I can stay healthy.

    1 2 3 4 5 6

12. Regarding my health, I can only do what my doctor tells me to do.

    1 2 3 4 5 6

Section I. Coping

The questions below are concerned with how you generally cope with problems in your life. Please circle the number corresponding to your response to the following questions using the scale:

1 = never
2 = rarely
3 = sometimes
4 = often
5 = always

1. I try to change the situation to get what I want.

   1 2 3 4 5

2. I make an effort to change my expectations.

   1 2 3 4 5

3. I tell myself the problem was unimportant.

1 2 3 4 5

4. I try to keep myself from thinking about the problem.

1 2 3 4 5

5. I try to let off steam.

1 2 3 4 5

6. I focus my efforts on changing the situation.

1 2 3 4 5

7. I try to adjust my expectations to meet the situation.

1 2 3 4 5

8. I tell myself the problem wasn't so serious after all.

1 2 3 4 5

9. I try to avoid thinking about the problem.

1 2 3 4 5

10. I try to relieve my tension somehow.

1 2 3 4 5

11. I work on changing the situation to get what I want.

1 2 3 4 5

12. I try to adjust my own standards.

1 2 3 4 5

13. I tell myself that the problem wasn't such a big deal after all.

1 2 3 4 5

14. I try to turn my attention away from the problem.

1 2 3 4 5

15. I try to get it off my chest.

1 2 3 4 5

Section J. Social Support

The following questions are about who you rely on for support. Please respond by circling the appropriate number below each question using the scale:
1 = very strongly disagree
2 = strongly disagree
3 = disagree
4 = neither disagree nor agree
5 = agree
6 = strongly agree
7 = very strongly agree

1. There is a special person who is around when I am in need.

1 2 3 4 5 6 7

2. There is a special person with whom I can share my joys and sorrows.

1 2 3 4 5 6 7

3. My family really tries to help me.

1 2 3 4 5 6 7

4. I get the emotional help and support I need from my family.

1 2 3 4 5 6 7

5. I have a special person who is a real source of comfort to me.

1 2 3 4 5 6 7

6. My friends really try to help me.

1 2 3 4 5 6 7

7. I can count on my friends when things go wrong.

1 2 3 4 5 6 7

8. I can talk about my problems with my family.

1 2 3 4 5 6 7

9. I have friends with whom I can share my joys and sorrows.

1 2 3 4 5 6 7

10. There is a special person in my life who cares about my feelings.

1 2 3 4 5 6 7

11. My family is willing to help me make decisions.

1 2 3 4 5 6 7

12. I can talk about my problems with my friends.

1 2 3 4 5 6 7

Section K. Pain Control

Here are some opinions which people sometimes hold about pain. I would like you to read them carefully and show how much you agree or disagree with each one by circling one of the numbers below each question using the scale below. There are no right or wrong answers.
1 = strongly disagree
2 = disagree
3 = mildly disagree
4 = mildly agree
5 = agree
6 = strongly agree

1. If I take good care of myself I can usually avoid pain.

1 2 3 4 5 6

2. Whether or not I am in pain in the future depends on the skill of the doctors.

1 2 3 4 5 6

3. Whenever I am in pain, it is usually because of something I have done or not done.

1 2 3 4 5 6

4. Whether or not I am pain depends on what the doctors do for me.

1 2 3 4 5 6

5. I cannot get any help for my pain unless I go to seek medical help.

1 2 3 4 5 6

6. When I am in pain I know that it is because I have not been taking proper exercise or eating the right food.

1 2 3 4 5 6

7. People's pain results from their own carelessness.

1 2 3 4 5 6

8. I am directly responsible for my pain.

1 2 3 4 5 6

9. Relief from pain is chiefly controlled by the doctors.

1 2 3 4 5 6

This is the end of the questionnaire. Please return it in the enclosed sae. Thank you very much for your time.

Appendix D – Comparison questionnaire

University of Chester, Department of Psychology

Women's health beliefs

Section A. This section is about general details about you

1. Please tell us your age ……. years.

2. How would you describe your occupation? (Please also tell us if you look after the home/family, are a student, retired, unemployed or other).

   ……

3. How would you describe your ethnic group?
   ……

Section B. This section relates to your general health

Please rate on a scale of 1 – 10 how good you consider your general health to be, where 1 = very poor and 10 = excellent.

1 2 3 4 5 6 7 8 9 10

Please circle appropriate response.

Section C. This section asks about your health knowledge

Please rate on a scale of 1 – 10 how good you consider your health knowledge to be, where 1 = very poor and 10 = excellent.

1 2 3 4 5 6 7 8 9 10

Please circle appropriate response.

Section D. Attitudes towards doctors and medicine.

Below are written a series of statements concerning attitudes towards medicine and doctors. Please read through them carefully and put a circle around one of the numbers under each statement to show how strongly you agree or disagree with it using the scale below. There are no right or wrong answers.

Scale:
1 = strongly disagree
2 = moderately disagree
3 = slightly disagree
4 = slightly agree
5 = moderately agree
6 = strongly agree

1. All doctors are good doctors.

   1 2 3 4 5 6

2. Medicine is based on scientific principles.

   1 2 3 4 5 6

3. I have absolute faith and confidence in all hospital doctors.

   1 2 3 4 5 6

4. The improved health of the nation is due to effective medicine.

   1 2 3 4 5 6

5. No matter how long you have to wait to see a doctor, it's worth it.

   1 2 3 4 5 6

6. Medicine has cures for most diseases.

   1 2 3 4 5 6

7. Doctors know what's best for you.

   1 2 3 4 5 6

8. Medicine is the best profession a person can have.

   1 2 3 4 5 6

Section E. Control

This section is about the way in which people view certain important health-related issues. Please read each item carefully and circle one of the numbers below each statement to show how strongly you agree or disagree with it using the scale below. There are no right or wrong answers.

Scale:
1 = strongly disagree
2 = moderately disagree
3 = slightly disagree
4 = slightly agree
5 = moderately agree
6 = strongly agree

1. If I get sick, it is my own behaviour which determines how soon I get well again.

   1 2 3 4 5 6

2. Having regular contact with my doctor is the best way for me to avoid illness.

   1 2 3 4 5 6

3. Whenever I don't feel well I should consult a medically trained professional.

   1 2 3 4 5 6

4. I am in control of my health.

   1 2 3 4 5 6

5. My family has a lot to do with my becoming sick or staying healthy.

   1 2 3 4 5 6

6. When I get sick, I am to blame.

   1 2 3 4 5 6

7. Health professionals control my health.

   1 2 3 4 5 6

8. The main thing which affects my health is what I myself do.

   1 2 3 4 5 6

9. If I take care of myself I can avoid illness.

   1 2 3 4 5 6

10. When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.

    1 2 3 4 5 6

11. If I take the right actions I can stay healthy.

1 2 3 4 5 6

12. Regarding my health, I can only do what my doctor tells me to do.

1 2 3 4 5 6

Section F. Coping

The questions below are concerned with how you generally cope with problems in your life. Please circle the number corresponding to your response to the following questions using the scale:
1 = never
2 = rarely
3 = sometimes
4 = often
5 = always

1. I try to change the situation to get what I want.

1 2 3 4 5

2. I make an effort to change my expectations.

1 2 3 4 5

3. I tell myself the problem was unimportant.

1 2 3 4 5

4. I try to keep myself from thinking about the problem.

1 2 3 4 5

5. I try to let off steam.

1 2 3 4 5

6. I focus my efforts on changing the situation.

1 2 3 4 5

7. I try to adjust my expectations to meet the situation.

1 2 3 4 5

8. I tell myself the problem wasn't so serious after all.

1 2 3 4 5

9. I try to avoid thinking about the problem.

1 2 3 4 5

10. I try to relieve my tension somehow.

1 2 3 4 5

11. I work on changing the situation to get what I want.

1 2 3 4 5

12. I try to adjust my own standards.

1 2 3 4 5

13. I tell myself that the problem wasn't such a big deal after all.

1 2 3 4 5

14. I try to turn my attention away from the problem.

1 2 3 4 5

15. I try to get it off my chest.

1 2 3 4 5

Section G. Social Support

The following questions are about who you rely on for support. Please respond by circling the appropriate number below each question using the scale:
1 = very strongly disagree
2 = strongly disagree
3 = disagree
4 = neither disagree nor agree
5 = agree
7 = very strongly agree

1. There is a special person who is around when I am in need.

1 2 3 4 5 6 7

2. There is a special person with whom I can share my joys and sorrows.

1 2 3 4 5 6 7

3. My family really tries to help me.

1 2 3 4 5 6 7

4. I get the emotional help and support I need from my family.

1 2 3 4 5 6 7

5. I have a special person who is a real source of comfort to me.

1 2 3 4 5 6 7

6. My friends really try to help me.

1 2 3 4 5 6 7

7. I can count on my friends when things go wrong.

1 2 3 4 5 6 7

8. I can talk about my problems with my family.

1 2 3 4 5 6 7

9. I have friends with whom I can share my joys and sorrows.

1 2 3 4 5 6 7

10. There is a special person in my life who cares about my feelings.

1 2 3 4 5 6 7

11. My family is willing to help me make decisions.

1 2 3 4 5 6 7

12. I can talk about my problems with my friends.

1 2 3 4 5 6 7

Section H. Pain Control

Here are some opinions which people sometimes hold about pain. I would like you to read them carefully and show how much you agree or disagree with each one by

circling one of the numbers below each question using the scale below. There are no right or wrong answers.
1 = strongly disagree
2 = disagree
3 = mildly disagree
4 = mildly agree
5 = agree
6 = strongly agree

1. If I take good care of myself I can usually avoid pain.

1 2 3 4 5 6

2. Whether or not I am in pain in the future depends on the skill of the doctors.

1 2 3 4 5 6

3. Whenever I am in pain, it is usually because of something I have done or not done.

1 2 3 4 5 6

4. Whether or not I am pain depends on what the doctors do for me.

1 2 3 4 5 6

5. I cannot get any help for my pain unless I go to seek medical help.

1 2 3 4 5 6

6. When I am in pain I know that it is because I have not been taking proper exercise or eating the right food.

1 2 3 4 5 6

7. People's pain results from their own carelessness.

1 2 3 4 5 6

8. I am directly responsible for my pain.

1 2 3 4 5 6

9. Relief from pain is chiefly controlled by the doctors.

1 2 3 4 5 6

That is the end of the questionnaire. Please now return the questionnaire and your consent form in the envelope provided, retaining the participant information. Many thanks for your participation.

Appendix E – Participant information for pregnant sample

University of Chester, Department of Psychology

Psychological processes in childbearing – participant information

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

- **Part 1** tells you the purpose of the study and what participation involves.
- **Part 2** gives you more detailed information about the conduct of the study.

Part 1

- ***What is the purpose of the study?***

I am currently researching women's approaches to and experiences of birth for my PhD thesis.

- ***Why have I been chosen?***

I am looking to recruit approximately 240 pregnant women in the area to participate in the study.

- ***Do I have to take part?***

No. It is up to you to decide whether or not to take part. If you do, you will be given this information sheet to keep and required to sign a consent form. You are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive.

- ***What does participation involve?***

Participation will involve completion of a questionnaire in the first instance. This will take approximately 15 minutes and questions will be asked about your health, your sense of control, coping, information access, and support. This questionnaire will be returned by post using a stamped addressed envelope provided.
At least one month after your due date, you will be sent a further questionnaire, which you will be asked to complete and return in the same manner.
This will be the extent of the requirements for this study. Participation will incur no financial cost to yourself and your responses to the questions will be anonymous and treated in confidence.

- ***What are the costs and benefits of taking part?***

Participation in this study will involve approximately 15 minutes of your time now and 15 minutes of your time at least one month after the birth of your baby. In addition, you will be required to post the questionnaires back, though the stamped addressed envelope for this will be provided at both stages.
Clearly, your participation will be valuable to this research and you will be entitled to a summary of the outcomes of this research for your information upon request.

- ***What if there is a problem?***

Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. The detailed information on this is given in Part 2. The telephone number for complaints is 01244 513358.

- ***Will my taking part in the study be kept confidential?***

Yes. All the information about your participation in this study will be kept confidential. The details are included in Part 2.

- **Contact details.**

Principal researcher: Liane Hayes
Telephone 01244 513358
Email l.hayes@chester.ac.uk

This completes Part 1 of the Information Sheet.
If the information in Part 1 has interested you and you are considering participation, please continue to read the additional information in Part 2 before making any decision.

Part 2

- ***What will happen if I don't want to carry on with the study?***

You have the right to withdraw your participation in the study at any time. If you withdraw, any data collected on you up until that point will be destroyed and not used in the study.

- ***Complaints***

If you have a concern about any aspect of this study, you should contact the principal researcher initially who will do her best to answer your questions (01244 513358). If you remain unhappy and wish to complain formally, you can do this through the principal research supervisor, Professor Elizabeth Mason-Whitehead, Faculty of Health and Social Care, University of Chester. (01244 513385).

- ***Will my participation in this study be kept confidential?***

Yes, your consent form will not be kept with your questionnaires and therefore you will not be identifiable from the responses you give to the questions. However, please note that if you disclose any sensitive information that indicates that you may be at risk (for example, from violence) the researcher is ethically bound to inform your midwife. Help and advice on these issues is available from the organisations at the foot of part 2.

- ***What will happen to the results of the research study?***

The results will be published in a PhD thesis in the University of Liverpool library. In addition, results may be presented in papers or posters at conferences, and in peer-reviewed journals. You will not be identifiable in any of these outputs.

- ***Who is funding the research?***

The research is funded by The University of Chester as part of its staff development programme.

- ***Who has reviewed the study?***

This study was given a favourable ethical opinion for conduct in the NHS by the Local Research Ethics Committee and has been reviewed by the Department of Psychology, the Faculty of Health and Social Care and The Graduate School at The University of Chester, as well as both supervisors and senior midwives.

You may keep this information sheet for future reference.

Please read and sign both consent forms if you wish to participate and return them both with your completed questionnaire. The researcher will countersign both consent forms and return one to you by post.

Thank you for taking the time to read this information and considering taking part in this research.

If you would like to talk to someone in confidence about your pregnancy and birth, you can telephone the NCT Pregnancy and Birth Line on 0870 444 8709 from 10am – 8pm Monday – Friday.

If you feel you and/or your baby are at risk or in danger you can obtain free and confidential help and support by telephoning the women's aid 24hr freephone helpline on 0808 2000 247 or on their website www.womensaid.org.uk

Appendix F – Consent form for pregnant sample

Patient Identification Number:

CONSENT FORM

Title of Project: Psychological Processes in Childbearing

Name of Researcher: Liane Hayes

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to consider the information and am able to contact the researcher if I have any questions. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected, and that any data relating to me will then be withdrawn from the study. ☐

3. I understand that my responses to questions will remain anonymous at all times, that I will not be identifiable from my responses in the resulting research output, and that confidentiality will be maintained. ☐

4. I understand that I can request a summary report of the findings if I wish to and have any further questions answered then. ☐

5. I agree to take part in the above study. ☐

_____	_____	_____
Name of Participant	Date	Signature

Participant's address (to send second questionnaire to)

_____	_____	_____
Name of Researcher	Date	Signature

Appendix G – Participant information for comparison sample

University of Chester, Department of Psychology

Women's health beliefs – participant information

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

- **Part 1** tells you the purpose of the study and what participation involves.
- **Part 2** gives you more detailed information about the conduct of the study.

Part 1

- ***What is the purpose of the study?***

I am currently researching women's health beliefs for my PhD thesis.

- ***Why have I been chosen?***

I am looking to recruit women in the area to participate in the control study. You must be female, aged 18 – 50 years and must not be pregnant, or have been pregnant in the past year.

- ***Do I have to take part?***

No. It is up to you to decide whether or not to take part. If you do, you will be given this information sheet to keep and required to sign a consent form. You are still free to withdraw at any time and without giving a reason.

- ***What does participation involve?***

Participation will involve completion of a questionnaire. This will take approximately 15 minutes and questions will be asked about your health, your sense of control, coping, and social support. This questionnaire will be returned to the researcher using a pre-addressed envelope provided.
This will be the extent of the requirements for this study. Participation will incur no financial cost to yourself and your responses to the questions will be anonymous and treated in confidence.

- ***What are the costs and benefits of taking part?***

Participation in this study will involve approximately 10 minutes of your time. In addition, you will be required to return the questionnaires, though the pre-addressed envelope provided.
Clearly, your participation will be valuable to this research and you will be entitled to a summary of the outcomes of this research for your information upon request.

- ***What if there is a problem?***

Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. The detailed information on this is given in Part 2. The telephone number for complaints is 01244 513358.

- ***Will my taking part in the study be kept confidential?***

Yes. All the information about your participation in this study will be kept confidential. The details are included in Part 2.

- **Contact details.**

Principal researcher: Liane Hayes, telephone 01244 513358
Email l.hayes@chester.ac.uk

This completes Part 1 of the Information Sheet. If the information in Part 1 has interested you and you are considering participation, please continue to read the additional information in Part 2 before making any decision.

Part 2

- ***What will happen if I don't want to carry on with the study?***

You have the right to withdraw your participation in the study at any time. If you withdraw, any data collected on you up until that point will be destroyed and not used in the study.

- ***Complaints***

If you have a concern about any aspect of this study, you should contact the principal researcher initially who will do her best to answer your questions (01244 513358). If you remain unhappy and wish to complain formally, you can do this through the principal research supervisor, Dr Elizabeth Mason-Whitehead, Faculty of Health and Social Care, University of Chester. (01244 513385).

- ***Will my participation in this study be kept confidential?***

Yes, your consent form will not be kept with your questionnaires and therefore you will not be identifiable from the responses you give to the questions.

- ***What will happen to the results of the research study?***

The results will be published in a PhD thesis in the University of Liverpool library. In addition, results may be presented in papers or posters at conferences, and in peer-reviewed journals. You will not be identifiable in any of these outputs.

- ***Who is funding the research?***

The research is funded by The University of Chester as part of its staff development programme.

- ***Who has reviewed the study?***

This study was given a favourable ethical opinion for conduct in the NHS by the Local Research Ethics Committee and has been reviewed by the Department of Psychology, the Faculty of Health and Social Care and The Graduate School at The University of Chester, as well as both supervisors.

You may keep this information sheet for future reference.

Please read and sign the consent form if you wish to participate and return it with your completed questionnaire.
Thank you for taking the time to read this information and considering taking part in this research.

Appendix H – Consent form for comparison sample

UNIVERSITY OF CHESTER, DEPARTMENT OF PSYCHOLOGY

WOMEN'S HEALTH BELIEFS

CONSENT FORM

Title of Project: Reliability and baseline measures for health beliefs questionnaire.

Name of Research Supervisor: Liane Hayes

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to consider the information and am able to contact the researcher if I have any questions. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my legal rights being affected, and that any data relating to me will then be withdrawn from the study. ☐
3. I understand that my responses to questions will remain anonymous at all times, that I will not be identifiable from my responses in the resulting research output, and that confidentiality will be maintained. ☐
4. I understand that I can request a summary report of the findings if I wish to and have any further questions answered then. ☐
5. I agree to take part in the above study. ☐

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Researcher	Date	Signature

Appendix I - Coding for decisions in birth plans.

Decisions in the birth plans are categorised under the following codes:

Pain control - includes preferences expressed for any of the following: simple painkillers such as paracetamol; TENS; entonox (gas & air); pethedine or other opiate drug; epidural or spinal block; acupuncture; hypnosis; homeopathy; breathing and other relaxation techniques such as yoga; massage.

Environment - includes preferences expressed for being at home or in hospital, music, lighting, temperature, incense, candles, water-birth, quiet, balls, bean bags, cushions.

Position - includes preferences expressed for mobility, laying on back or side, sitting on birthing chair or stool, squatting, standing, kneeling, on all fours, bending over bed or other object, use of stirrups / footrests.

Support - includes preferences expressed for presence or absence of partner / father of baby, mother, father, sister, other children, friends, doula, midwife, or any other member of family (e.g. in-laws) for whom a particular preference is expressed regarding their presence or absence during labour and / or delivery.

Medical – includes preferences expressed for either having or avoiding any of the following: induction of labour using oxytocin or similar; sweeping of the membranes / breaking of waters; electronic fetal heart monitoring; episiotomy; forceps delivery; ventouse delivery; caesarean section; syntometrine for third stage labour; presence of student midwives or obstetricians; cutting of umbilicus by partner or only after pulsation has ceased.

Note decisions count as such whether the preference is expressed for or against any of the above. Content relating to previous births should not be included.

The number of decisions in each of the above five codes should be noted separately and then a total number of decisions should be calculated.

Appendix J – Coding for valence in birth stories

Positive statements

- Statements indicating normal progression of labour, such as an increase in dilation or more frequent/intense contractions.
- Statements indicating relief of pain.
- Statements containing positive emotion words.
- Statements indicating acknowledgement of woman's wishes by health professionals.
- Statements indicating healthy/safe birth.
- Statements indicating health and well-being of mother and/or baby.

Negative statements

- Statements containing negative emotion words.
- Statements suggesting woman not feeling supported, being listened to or being over-ruled (including being told to go home, being told not in labour).
- Statements indicating problems with the normal progression of labour or delivery (induction, abnormal presentation, meconium, foetal monitoring, being overdue).
- Statements indicating adverse effects of labour or delivery such as sickness, medical emergencies (ambulance, Caesarean section, ventouse, forceps), tearing, stitching.
- Statements referring to previous negative experiences.
- Statements suggesting limited resources (such as no beds, busy staff, long waits, changing midwife).

Appendix K – Examples of positive and negative statements from birth stories.

Positive:

The midwives were sensitive to my needs and listened to everything I had to say

The team were great and talked me through what would happen

The aftercare I received from the midwives was excellent and I was able to discuss the birth in full to understand it fully

My birth experience was very positive

My birth plan was adhered to

Baby had turned to the correct position

All went to plan

Negative:

Two failed epidurals

The bleeding took a while to stop

Rushed into hospital

Had an episiotomy and forceps

Had the injection to deliver the placenta even though I was going to try and deliver naturally

The second degree tear was painful to fix and pretty undignified

The baby was breech and I lost a lot of blood